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A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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MOTOR INDUSTRY LEADS RECOVERY

Results of Fuel Research Presented in S.A.E. Papers; Interest at Session Grows

Experts of Federal Bureau of Standards and Engineers in the Field Lead Discussions at Annual Meeting in Detroit

By CHRIS SINSABAUGH

DETROIT, Jan. 21.—As the week rolls along, interest in the annual meeting of the Society of Automotive Engineers in this city continues to increase. So far the papers offered have been decidedly pertinent to the important problems of the industry.

After thoroughly discussing fuels and production costs yesterday, the engineers today participated in a detonation symposium in the morning.

D. B. Brooks, N. R. White and G. C. Rodgers of the Federal Bureau of Standards were the speakers on "Effect of Humidity and Temperature on Octane Numbers of Secondary Detonation Standards."

H. L. Horning of the Waukesha Motors Company spoke on the "Co-operative Fuel Research Engine"; John M. Campbell, W. G. Lovell and T. A. Boyd of General Motors on the "Influence of Carburetor Settings and Spark Timing on Knock Ratings"; Dr. Graham Edgar of the Ethyl Gasoline Corporation on "The Effects of Jacket Temperature Upon Relative Knock Ratings"; H. F. Huf, J. R. Sabina and J. B. Hill of the Atlantic Refining Company on "The Effect of Knock Sound Intensity on Knock Ratings"; H. R. Stacey of Standard Oil Development Company on "The Effect of Oil Consumption and Oil Temperature on Octane Number Ratings"; Neil MacCoull of the Texas Company on "The Bouncing Pin Versus Throttle Audibility Method"; C. H. Barton of Asiatic Petroleum, C. H. Sprake of Anglo-American Oil and R. Stanfield of Anglo-Persian on "Knock Rating."

At the same time there was a

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BOSTON SHOW DRAWS LARGE ATTENDANCE

Boston, Mass., Jan. 21.—Attendance at the annual Boston automobile show is running above previous expectations and dealers declare that so far sales have been greater than a year ago. About $2,000,00 worth of passenger cars, trucks and equipment are on display in the midst of one of the most

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CHRYSLER SALES AT SHOW NEARLY 3 TIMES 1930

Detroit, Jan. 21.—Retail sales of Chrysler cars at the New York Automobile Show this year were two and three-quarter times as great as they were during the 1930 show, it was announced here today by J. W. Frazer, general sales manager of Chrysler Sales Corporation.

As a result of the market increase in actual sales as well as the enthusiastic participation in the events of the automobile show by visiting dealers, the 1931 outlook for Chrysler is very satsifactory, according to Mr. Frazer.

HEADS LYCOMING

W. H. BEAL

Auburn, Ind., Jan. 21.—E. L. Cord, president of the Cord Corporation, announced today the appointment of W. H. Beal to the presidency of the Lycoming Manufacturing Company, Williamsport, Pa.

Mr. Beal was formerly vice-president and general manager and succeeds John H. McCormick, who resigned as president of the company on January 13.

Mr. Beal started with Lycoming in Williamsport in the sales department twelve years ago.

DE VAUX CAR PRICED AT $545 TO $785

Grand Rapids, Mich., Jan. 21.—The De Vaux-Hall Motors Company today announced the following prices on the De Vaux passenger car, soon to make its appearance on the market:

Phaeton, $545; business coupe, $595; speical coupe with wire wheels, $625; sport coupe with rumble seat and wire wheels, $665; sedan, $695; special sedan with wire wheels, $725; custom coupe, six wire wheels, $765; custom sedan, six wire wheels, $785. All prices are f. o. b., Lansing, Mich.

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REEVES POINTS TO RENEWED ACTIVITY BY CAR MAKERS

General Manager of N. A. C. C. Tells Chicago Board Of Trade That Automotive Executives Are Assuming Responsibility of Leadership

CHICAGO, Jan. 21.—"Based on the outcome of the show at New York and the trade prospects at the Chicago Motor Show, which opens on Saturday, the automobile executives have assumed the responsibility of leadership in bringing improvement in business," according to Alfred Reeves, general manager of the National Automobile Chamber of Commerce, in his address before the Chicago Association of Commerce luncheon today.

"After traveling in second speed on a flat tire for the past twelve months, we have left the 1930 detour with the Better Business Highway ahead," Mr. Reeves declared.

"The industry is poised with its foot on the accelerator awaiting the green light that will come with the Chicago Motor Show, and will give the right of way for 1931 business.

"Reports from the field indicate a decided interest in the new cars and their extraordinary values, which has resulted in 100,000 men being returned to the shops during the past two weeks. The great Chicago exhibition is always an index for anticipating performance of the industry, and it is of greater importance this year than ever before.

"It seems most unfortunate that the usual enterprise of Chicago has not provided a proper building to permit this show to be twice its present size.

"By gearing its production to consumer requirements and strengthening their distributing organizations, the automobile industry is in a much stronger position than ever before, with decks cleared of old stocks and ready for 1931 business.

"We know that the 26,700,000 motor cars in this country are wearing out, because the gasoline consumption is constantly increasing.

"As President Hoover so aptly expressed it in his address at the ban-

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DEALER MEETINGS HELD IN DETROIT DURING SHOW WEEK

Detroit, Jan. 21.—Sales have definitely swung upward at the Detroit automobile show this week. Three of the local car companies held dealer rallies yesterday afternoon and evening.

Some two hundred Studebaker dealers from Michigan and part of Ohio were brought together by Clair Savage, manager of the Detroit branch, at a banquet at the Detroit-Leland. Paul Hoffman, general sales manager of Studebaker; Paul Castner, S. P. A. truck sales manager, and J. W. Merrin, manager of the South Bend branch, addressed this big field force on the

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HUDSON NEW YORK SALES AVERAGE NINETEEN DAILY

New York, Jan. 21.—Robert Cole, head of the Hudson Motor Car Company of New York, today announced that so far during January sales of Hudsons and Essex cars had averaged 19 units per day. This compares with an average of 16 per day in December and sets a very satisfactory rate of sales during a month that is not a particularly lively buying period.

Chevrolet Retail Deliveries Show Gain Over December

DETROIT, Jan. 21.—The Chevrolet Motor Company delivered at retail during the first ten days of January 13,595 cars, which compares with 13,588 in the first ten days of December. Stocks of cars in transit and hands of dealers January 10 totaled 48,058, which is an average of 4.8 cars per dealer.

The management estimates it will need a stock of cars for transit and dealers samples of between 65,000 and 70,000 cars for the peak selling season in April and production is being timed accordingly. Of present 48,058 car stock, approximately 10,000 are in transit.

President W. S. Knudsen says to Dow, Jones that absorption of cars in the district east of the Mississipi River is rapidly approaching the normal seasonal curves established in past years.

DE SOTO UNIT MOVES INTO ANOTHER PLANT

Detroit, Jan. 21.—De Soto Motors, a Chrysler unit, has moved to the Mount Elliott plant of the Chrysler Corporation at Mount Elliott and Lynch Road. This plant has housed Plymouth since its inception.

The Mount Elliott plant is approximately half a mile in length, boasting the largest single room in one plant in the world. It has four assembly lines which run the complete length of the building and there are fourteen miles of conveyors.

Head of Big Banking Group Offers Aid to Car Dealers

Special from A. D. N. Detroit Bureau

DETROIT, Jan. 21.—The suggestion, in the form of a letter, that its correspondent banks throughout the country consider the necessity of giving local automobile dealers "a lift at this particular juncture," with a view to "getting some real money in circulation once again and doing something constructive for the whole business situation," has been issued by the Guardian Detroit Bank, a step that has been received with enthusiasm by the automobile industry, whose eyes are concentrated on the Detroit Automobile Show just now.

Robert O. Lord, who is president of the bank and of the powerful Guardian Detroit Union group, of which it is a member, points out in his letter that "livelihood of one-tenth of our population is directly or indirectly, dependent upon the automobile industry," and is sending copies of the Detroit papers reporting the increased production and employment in the city.

"I feel," writes Mr. Lord, "that these automobile men are making a gallant effort to push industry over its 'dead center.'"

Automobile executives regard the bank's step as one of greatest importance, pointing out that if the banks throughout the country follow the suggestion it will result in automobile dealers throughout the country contributing in larger measure toward pulling business out of its present depression.

S.A.E. Members Hear Papers On Industry's Problems

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transportation session presided over by Warner Tufts, at which papers were read by D. W. Russell of the Southwestern Transportation Company, and John B. Walker of the Greyhound Lines.

Motor trucks and motor coaches held the boards in the afternoon. Guided by A. J. Scaife, the audience listened to J. C. Bennett of the Associated Oil Company, on "Future Requirements of Motor Truck Operators."

The evening session was set aside for aircraft engineers, with but one paper on the schedule: "Economics of Ocean Airways, With Special Reference to the Seadrome System," by E. R. Armstrong of the Armstrong Seadrome Development Company.

Yesterday's sessions brought out good crowds of listeners with the high spots coming in the morning, which was given over to a discussion of fuels. In introducing the subject of fuel research on which Miss Elizabeth W. Aldrich presented a paper by Dr. O. C. Bridgeman and herself, both of the Bureau of Standards, Chairman J. B. Macauley of Chrysler said that the past three years have seen a marked change in the attitude of automotive engineers regarding the fuel used in their engines.

This has been brought about by the changes in fuel that have been developed in the last three years rather than from the engineers being awakened through their own work to an interest in fuels. The paper reviewed comparative data obtained on the gum content of gasolines as determined by three different test methods, the copper dish, the glass dish and the air jet. Twenty gasolines and as many blends of them with a gum-free gasoline were tested.

The conclusion was that there is insufficient evidence to show that any of the methods is significant as regards gum deposition in the engine and further methods of attack on the problem were suggested.

A. E. Becker, of the Standard Oil Development Company, in commenting on the paper, pointed out that a customer is interested in the gum content of the gasoline at the time it enters the carburetor and in some cases at the time also that it enters the storage tank. Mr. Becker believes that first of all a reproducible test must be developed that can be used by everyone and that will tell the actual gum content of the gasoline at the time of the test. He also mentioned that Dr. Fisher has modified the air-jet method so that time of evaporation has practically been eliminated. The Fisher modification consists of dropping the gasoline drop by drop into a dish at the same time blowing a current of air onto the gasoline. In this way there never is more than two or three drops of gasoline in the dish at the same time. R. E. Wilson, of the Standard Oil Company of Indiana said that the method which Dr. Becker mentioned amounts to flash distillation and has always seemed to Mr. Wilson to be more logical if it were necessary to get away from the steam proven test method, as it simulates manifold distillation.

The second paper was on the subject of fueline temperatures in motor cars and motor buses as they affect the important subject of vapor lock. It was presented by Dr. Bridgeman of the Bureau of Standards. In introducing the subject, he said that gasoline in recent years has been becoming more and more volatile so that users began to have trouble with the engine idling, even having trouble when the car was running at 30, 40 or 50 miles an hour.

This has been called gas lock or vapor lock. He defined vapor lock as the complete or partial interruption of fuel flow in the fuel-feed line; due to the formation of bubbles or gas or vapor in the fuel-feed system. Less frequently vapor lock occurs from the gasoline boiling. The subject is tied up with vapor pressure phenomena due to dissolved air and other gases, and also with the temperature of the fuel feed system. In connection with investigation of the subject, the bureau measured the temperatures at various points of the fuel system of twenty-seven automobiles and eight buses and found large increases of temperatures between the fuel tank outlet and the carburetor. Because of the effect of this temperature rise in inducing vapor lock, the authors of the paper pointed out that in designing fuel systems, the following simple points should be kept in mind:

The fuel-feed line from the rear tank should preferably be on the opposite side of the car from the exhaust pipe. If this is not feasible, the fuel-feed line should be run outside of the frame channel and in addition should be thermally insulated from the exhaust pipe. The fuel pump should be well insulated thermally from the crank case and shielded from the exhaust manifold. The fuel pump should be so located with respect to the engine supports and accessories that it will get its full share of cooling in the air stream.

Chairman Maculey, in commenting, declared that the replacement of the vacuum tank by the engine-driven fuel pump was a good change. He said he doubted if most designers would care to go back to the vacuum tank, but he feels that the change has unquestionably introduced complications into the problem of vapor-lock handling. He remarked that the refiners stand ready to furnish better gasolines than we have been used to in the past or are getting at present, provided the cars are able to handle them and that failure to permit the refiners to supply this more volatile fuel means a certain economic loss.

BOSTON SHOW DRAWS LARGE ATTENDANCE

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elaborate decorative layouts ever arranged for a Boston show.

The decorative scheme is Oriental and last night Chinese night was observed, with various Chinese organizations of the city being the guests of Chester I. Campbell, manager of the show.

Six hundred of Boston's unemployed were very materially helped by the work of preparing Mechanics Building for the event. Five thousand square yards of fine carpeting were laid in Exhibition Hall, the entire output of a Connecticut factory, which required three months for the work, being taken for this purpose. In Grand Hall an almost equal amount of linoleum was used, together with some 22,000 square feet of sky rugs, patterned after famous Chinese rugs. Fifteen thousand electric lights, ranging from fifteen to a thousand watts, in addition to the regular building service are used.

HUNDREDS OF TAXICABS BARRED IN NEW JERSEY

Trenton, N. J., Jan. 21.—Failure of the Jersey Mutual Casualty Insurance Company may result in the revocation of registrations of hundreds of taxicabs throughout the state, Harold G. Hoffman, commissioner of motor vehicles, states today. The company was taken over by the Department of Banking and Insurance last week and the policies of the company terminated.

Taxicabs insured by the company have been notified by Hoffman that they must immediately reinsure with another authorized concern and file a certificate with the department within ten days. If they do not comply Hoffman said it would be necessary to show cause why their registrations should not be revoked.

GENERAL MOTORS TRUCK STAGES SPECIAL DISPLAY

Montreal, Jan. 21.—During the Montreal automobile show this week General Motors Truck and Coach of Canada, Ltd., is displaying a special exhibit on its premises. The exhibits number twenty-five trucks with various body and utility combinations. W. A. Quinlan, local manager, and factory officials are in charge.

DEALER MEETINGS HELD IN DETROIT

(Continued from Page 1)

outlook and how to sell the new car, while Knute Rockne, Notre Dame football coach, gave one of his inspirational talks.

A. D. Geissler, Willys-Overland distributor, was host to 250 dealers, salesmen and guests at the Book. Speakers included Vice-President George M. Graham from the factory; Nelson Beardsley, Eastern sales manager, and David Wilson, president of the Wilson foundry at Poni-Pontiac.

Cadillac's Michigan dealers launched at the Recess Club in the Fisher Building, brought together by Harry Cupper and Roy L. Newton, regional managers.

CALIFORNIA TIRE PLANTS ADOPT PRICE REDUCTIONS

Los Angeles, Jan. 21.—Following announcement of slashes in passenger car tire and tube prices by Akron manufacturers, local factories and factory branches have followed suit.

The Goodyear factory has inaugurated a sliding scale in discounts that average about 6 per cent. in the standard lines of passenger car tires and somewhat higher in the mail-order grade.

Goodrich factory officials report a 11 to 12 per cent. cut on grades similar to mail order tires and a 6 per cent cut on other passenger car tires.

Firestone has made a cut of 6½ to 12 per cent. on its tire output. It reports that the Los Angeles facory is running three eight-hour shifts, and is behind on its Pacific Coast orders.

Locally General Tires has made a cut of 7½ to 12 per cent., while the Los Angeles branch of the Sieberling Rubber Company has slashed 10 to 12 per cent. off its passenger car tire and tube prices.

LOS ANGELES CAR SHOW WILL OPEN JANUARY 24

By JOHN C. WETMORE

Los Angeles, Jan. 21.—Angeleno-land's annual automobile show will open next Saturday, January 24, and continue for eight days. It will once more be held under canvas, there as yet being no building in the city adequate in size to house the exhibit, which will be confined to motor cars, trucks and boats.

All members of the Los Angeles Motor Car Dealers' Association, save Rolls-Royce, will exhibit the cars handled by them, the display being confined exclusively to members. Ford, Chevrolet, Dodge and Reo trucks will comprise the commercial car exhibit.

1931 Southland exhibition will open under highly encouraging local business conditions, new passenger car registrations in the first nine days of January having shown an increase of 22.2 per cent. in southern California and 43.6 per cent. in Los Angeles city and county over a year ago.

STOCKS OF GASOLINE AND FUEL OILS LOWER

New York, Jan. 21.—Stocks of gasoline and fuel oils were 480,000 lower at the end of last week. Production of cracked gasoline for the week showed an increase of 13,000 barrels to 2,475,000 barrels, accounting in part for the drop in gas and fuel oil stocks, oil men said yesterday. The production of straight run gasoline is little or no larger than it was in recent weeks, while the refineries have begun the cracking of the heavier oils, preparing for the spring demand, it was said.

USED CAR FAIRS PROVE POPULAR IN GERMANY

Washington, Jan. 21.—"Used car fairs" as a means of disposing of used cars quickly and in large quantities are being used successfully in various parts of Germany and are being promoted with special frequency in the Rhineland district, according to advices received in the automotive division of the Department of Commerce.

SPARKS from DETROIT

3,000,000 Oldsters Retire

* * *

Iron Bones a Boon

* * *

The "Doggie" Harness Maker

* * *

Chris Sinsabaugh—Detroit Editor

"INDEPENDENT estimates prepared by the National Automobile Chamber of Commerce and a leading car manufacturer agree that in 1930 approximately 3,000,000 old cars were retired from service—twice as many as six years ago—and this number will be increased to about 4,000,000 cars per year within the next five years," is the way Herbert Buckman, manager of the Cleveland Automobile Manufacturers and Dealers Association, started his talk, "Bounty Plans and Progress of the Highway Safety Movement," before the annual meeting of the Michigan Automotive Trade Association, held in Detroit Wednesday.

Buckman stands out as an authority on this nation-wide junking plan, for the scheme worked out by his organization has received the approval of the N. A. C. C., which is the backbone of the movement to rid the highways of the derelicts, which has been labeled the National Highway Safety Plan.

That great progress is being made was told by Buckman, who reported that those manufacturers co-operating with the N. A. C. C., include all divisions of General Motors, Studebaker, Dodge, Hupmobile, Nash and Graham individually, while a number of others have intimated their intention of participating at an early date.

* * *

AS the Cleveland plan is regarded as a model that might well be followed by others, Buckman went into considerable detail explaining its workings. He charged that the car-wrecking type of scrap concern has been guilty of practices inimical to the interests of automobile dealers and of the organized scrap industry through the resale of junkers that should be completely scrapped, and the sale of used parts.

Under the Cleveland scheme, when a car is scrapped it stays scrapped. The junker is reduced to nothingness, so far as its resemblance to a motor car is concerned, the salvage being sold to the steel mills only as scrap. A certificate of demolition is given as each junker is knocked on the head.

All dealers in Cuyahoga county operate under the control of the Cleveland association, being given free twos and being paid 25 cents per hundredweight for the scrap. In addition, the association receives $1 per car from the scrapping company. The fund so created is held in trust by the dealers' association, to which is added 28 per cent. of the net profits of the scrapping company, after 6 per cent. on average invested capital has been deducted. This fund is distributed to the contracted dealers once a year in proportion to their junker tonnage. Out of town dealers within a radius of approximately 100 miles from Cleveland deal directly with the scrapping company, paying towing rates and receiving 25 cents per hundredweight, the present rate. They also share in the scrapping company's profits.

* * *

INASMUCH as the scrap from these junkers is sold to the steel mills instead of being converted into rehabilitated parts, it is apropos for this column to quote a recent statement made by Benjamin Schwartz, director general of the Institute of Scrap Iron and Steel, Inc.

"Some appreciation of the importance of scrap in the steel industry today can be gathered from the fact that last year approximately 30,000,000 tons of scrap were used by steel mills and foundries in the manufacture of iron and steel articles.

"Were it not for the use of scrap iron and steel, the drain on the iron ore reserves of the country would be a serious situation to contemplate. For every ton of scrap iron and steel used, a total of approximately five tons of iron ore, coal and limestone, which enter into the manufacture of a ton of pig iron, are displaced. The use of 30,000,000 tons of scrap last year therefore conserved for future generations 150,000,000 tons of iron ore, coal and limestone."

* * *

WHAT are the harness makers and the horseshoers doing nowadays is the question one hears. I have wondered myself, and it was not until the other day that I got the answer through reading a human interest story in the Detroit Free Press. That told me that the harness maker had gone to the dogs literally and quotes old Louis La Plante, who is still pegging along, gaining a fair livelihood making collars and harnesses for the high class dogs of Detroit. Louis says that at one time there were about 100,000 horses in Detroit.

TRAINED SALESMEN BEST ASSET TO DEALERSHIP

Hupp Distributor in San Antonio, Tex., Stresses Selling Points for Staff to Use Among Prospects

"WE have found that the salesmen who have a thorough knowledge of what they are selling, are the men who get the best results," explained Dale Dietrich, general manager of the San Antonio Motor Company, Hupp distributor of San Antonio, Tex., in telling of his sales methods. "Too frequently, when new models are brought out, the entire organization will be so anxious to get out and sell, that they overlook some of the best selling points," he continued.

"When Hupp brought out their new models this year and announced free wheeling, our salesmen took it as another strong selling point and were eager to run out and tell about it. On inquiry, we found that they did not understand the principle, what it meant to the wear and tear of the car, and what should be stressed in selling the prospect.

"When we explained that there are thirteen points that are all good selling points, they were somewhat surprised. It just goes to show that a sales manager should make sure that his salesmen know what they are talking about when they go out to sell. I think one of the greatest problems before the industry today is better salesmen. That has been proved both in fact and theory. When we can produce salesmen who can sell without making scores of needless calls; when we can produce men who will put in a full day's work without riding around; when we can hire men who will work on sales and not drawing accounts, then one of our biggest problems will have been overcome.

"Our experience in this respect goes to show that this point is right. The things salesmen hear in the meetings when new models are introduced are not always clear. Some men are slower to grasp a point than others. Some men must have a thing thoroughly explained before they grasp its value. Others must see a working model. Training salesmen on all the selling points, and then letting them use those which most appeal to them, and which they can explain the best, will get better results."

BUICK DEALERSHIP ADDS OAKLAND-PONTIAC LINES

Port Angeles, Wash., Jan. 21.—The William J. Buhler Motor Company, Buick dealer in this territory, has also been appointed Oakland-Pontiac dealer for Port Angeles and vicinity. The firm is one of the oldest in this territory.

Peppy Ads Used by Suburban Dealers

Boston, Mass., Jan. 21.—Used car dealers in both Boston and surrounding communities are confident that 1931 will be a banner year in used car sales. The past year stabilized the used car market, Boston dealers say, while suburban dealers see a normal active market already returning and expect sales to run ahead of 1930. Greater values and better stocks, with a wider range of choice, are to be seen, and many of the larger suburban dealers are invading the Bostoh market through the daily newspaper advertising pages.

One Boston daily published a special used car section on Sunday in connection with the annual new car show, and carried about four pages of special used car advertising. Some of the ads were very striking, notably those of the Norwood Auto Station of Norwood, Mass., about forty minutes' ride from Boston, and the Washington Street Garage of Quincy, about twenty-five minutes out from Boston. The Norwood advertisement called its display of used cars "The Show of Shows, Featuring Five Star Acts." Each of these acts represented a speecial "buy" in a used car, the name, model and price being printed in black on a white star, the background of the ad being solid black. In a box was listed a group of "other headliners," consisting of some twelve other high-grade used cars of well-known makes.

The Washington Street Garage's ad showed the side curtains of a stage with the footlights, and below this the heads of a large audience. On the white drop curtain was printed: "The stage is set for our great presentation of used car values," followed by a list of some of the offerings. This concern is a regular Chevrolet retail dealer, and naturally most of the trades offered were Chevrolets. Both the above described ads stood out in a solid page of other used car advertising.

That suburban firms can come into Boston and pay the stiff rates for advertising in the Boston papers shows that the used car market is wherever you can find a customer, and that buyers will go considerable distances to get what they want. Certain of the suburban dealers do a larger used car business than some of the city dealers, and a proportionate amount of new car business.

OREGON OLDSMOBILE DEALERS HEAR TALKS ON PROSPECTS IN 1931

Portland, Ore., Jan. 21 (UTPS).—Oldsmobile dealers from Oregon and southern Washington participated in their annual sales conference sponsored by the Oldsmobile Company of Oregon.

Ralph Thom, assistant manager of the Bank of California, was the principal guest speaker. Mr. Thom cited the fact that an automobile dealer's obligation to the customer extended through the servicing of the car and commended the Oldsmobile Company of Oregon upon the reputation it had built up in this respect.

Dealer prospects for 1931 were outlined by E. F. Glenny, Pacific Coast regional manager for Oldsmobile. The factory executive predicted that 1931 would prove a very satisfactory year for dealers. W. M. Anderson, vice-president of the Oldsmobile Company of Oregon, explained the mechanical improvements of the new Oldsmobile, which had just been announced to the public.

DALLAS FORD DEALER REMODELS ITS PLANT

Dallas, Tex., Jan. 21.—Complete remodeling and redecorating of the building occupied by the Lamberth Motor Company, Ford dealer, has been completed, giving this firm one of the most beautiful and modern automotive plants in the city. The company has been authorized Ford dealer in Dallas for fourteen years, and has enjoyed an unusually successful career.

FORD SHOW STAGED IN NEW BRUNSWICK, N. J.

New Brunswick, N. J., Jan 21.—W. E. Mount & Son of this city is staging a Ford show this week at its headquarters, 99 Albany St. Featured on the salesroom floor are fourteen different and two of the latest models. On the second floor is the cmmercial car exhibit, two models of stake trucks, panel deliveries with drop floors and hydraulic dump bodies.

The exhibition includes cutaway trucks, rustless steel, cutaway batteries and cutaway parts, showing the working mechanism.

Special features are a glimpse of the "Gay Nineties" and the "Gibson Girl," music and novelties.

CHEVROLET DEALERSHIP CHANGE IN ALLIANCE, O.

Alliance, O., Jan. 21.—Occupying almost a half city block, the Keller Motor Company, successor to the Williams Chevrolet and Sales Company, formally opened its plant to the public this week. The new concern, which is headed by J. H. Keller, who has been identified with automobile selling in Alliance for almost five years, recently purchased the Williams concern. G. H. Clapsaddle has been retained by the Keller organization as manager of new car sales. M. M. Goodwin, until recently affiliated with Graham-Paige in Ashtabula, O., is manager of the used car department of the Keller concern.

OAKLAND-PONTIAC OPENS DEALERS' SALES SCHOOL IN WICHITA TERRITORY

Wichita, Kan., Jan. 21.—Officials in the Oakland-Pontiac organization assembled here to conduct a sales school for Oakland-Pontiac dealers in this territory. Those in attendance were: R. E. Wcodley, Wichita manager of the General Motors Acceptance Corporation; B. F. Gridley, president of the Gridley Motor Company, distributor of Oakland and Pontiac cars; S. S. Stone of Kansas City, zone sales production manager; E. J. Beguhn, Kansas City, zone sales manager; Glenn S. Potter, Kansas City, zone parts and service manager; D. S. Blackburn, district representative, and J. G. Stonemetz, district representative.

Approximately 100 Oakland-Pontiac dealers attended the sessions. A series of speeches, supplemented with film and slide illustrations bringing out the best points of the new Oakland and Pontiac cars, filled the program.

Those in attendance termed 1930 a fair year, with prospects of 1931 being one of the best in the history of the organization.

JEFFERSON MOTORS CO. NOW NASH DISTRIBUTOR

Birmingham, Ala., Jan. 21 (UTPS).—The Jefferson Motors Company, one of the oldest sales companies in the entire Birmingham district, has been appointed distributor for Nash for both Birmingham and Montgomery, the latter the state capital.

PASSAIC FORD DEALER IN FOURTH PLACE IN NATIONAL CONTEST

Passaic, N. J., Jan. 21.—The Willard Sulzberger Company, Inc., of 14-16 Howe Ave., has advanced to fourth position among the leading dealers in the national salesmen's contest conducted by the Ford Motor Company, which will close on January 31, according to the latest standing released today.

Harry Altman, sales manager for the local company, has attained second position in the contest to determine the leading Ford salesmen in the metropolitan area.

According to a letter received recently from the manager of the Ford Motor Company's Edgewater plant, three dealers from other branch territories have accepted a challenge from the local company. At the present time, however, the Willard Sulzberger Company is leading all three dealers in sales.

Several days ago the local dealer received a telegram from the Ford Motor Company congratulating the entire organization on the showing that has been made thus far.

KOLARESY MOTOR CO. NEW AUBURN, CORD DEALER

Irvington, N. J., Jan. 21.—Kolaresy Motor Company of 717 Lyons Ave., Irvington, has been appointed Auburn and Cord dealer for Irvington and Maplewood. Mr. Kolaresy, who is president of this company has sold Buick, Dodge, Oakland, Pontiac and Hupmobile. Associated with Kolaresy is H. V. Preston, formerly with the Graham-Paige Company at Montclair, and Herbert W. Hahan, formerly with the Studebaker for a number of years. The service department is under the supervision of George Hendershot, service manager, formerly associated with the Bowen Motor Company, former Auburn dealer in Irvington.

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General Motors Trucks
H. L. ZOBEL CO.
119 Main St. Bradley Beach. Phone 2784
Freehold, N. J. Phone 171

MARMON—ROOSEVELT and AUSTIN
SALES and SERVICE
LENOX S. REID, Inc.
1206 Main Street Asbury Park

NASH GOOD USED CARS
Belmar Auto Co., Inc.
Auto Repairing and Accessories
[illegible] Tel. Belmar [illegible]

AN AUTOMOBILE DEALERS' directory, published daily in local newspapers, has been found successful in Asbury Park, N. J., due to the large number of visitors to this shore resort. Not only service and the sale of parts have resulted from this directory, but dealers have traced a number of new and used car sales directly to this method of advertising

By good management Oakland – Pontiac dealers make money and also qualify for "Oakland's Leaders" -and thereby share in formulating company policies

OAKLAND 8
PONTIAC 6

Oakland Motor Car Co
Pontiac, Mich.
Division of General Motors

Making new friends ...and keeping the old

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

Published Every Day Except Sunday and Monday by
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Member A. B. C.

THURSDAY, JANUARY 22, 1931

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Sound Advice

AT a recent Chevrolet dealer meeting, H. J. Klingler, vice-president of the organization, made an excellent address to the 1,200 merchants assembled before him, and one phrase that he used has stuck in the head of one of his hearers at any rate. This was when he told the dealers that during 1931 they should "keep used car bidding where it belongs and let volume come where it will."

If all Mr. Klingler's hearers took that phrase of his message to heart the year 1931 holds nothing but good for them. Chevrolet is a company building the greatest number of six-cylinder cars of any organization in the world. The output of this factory is greater than that of any other, with a single exception. Yet here is the sales executive advising his dealers to let volume come as an inevitable concommitant of good merchandising.

In 1929 a good many of us erred in putting volume ahead of anything else. Some factories poured cars on their dealers' backs until those unfortunate merchants were flattened to the financial earth. And dealers caught the fever. Many of them sold and sold, more cars than they had any real right to handle, keeping their eyes on the number of units or the gross profits until the year's balance sheets told them an unpleasant story.

The year 1931 is going to bring a very fair market for motor cars. Car sales will be dependent to a considerable extent on general business conditions, but a lot of people who did not buy last year from motives of economy are going to place orders in 1931. Do not mistake us; we are not predicting another feverish boom, but we do believe that the sales volume will run some hundreds of thousands ahead of the 1930 level. There will be a very decent profit for dealers who maintain the standards of good merchandising. There will also be an excellent chance of a bad balance sheet for men who forget that their only object should be NET profit.

For 1931, with its possibilities, every dealer ought to establish one fundamental rule; no used car shall be taken in at a price that makes a loss inevitable. Human judgment may err, but in used car bidding the trouble usually has been a definite intention to take a loss.

We would like to see every American automobile dealer hang on his office wall Mr. Klingler's phrase: "Keep used car bidding where it belongs and let volume come as it will," as a golden rule for 1931.

If American dealers did that and followed the precept, there isn't even the faintest shadow of question that 1931 would be a prosperous year.

Flax in Tires

SOME very interesting experiments are being conducted into the possibilities of using linen instead of cotton in the manufacture of tires. Some time since a German, Herr Rheinhold Geiss, discovered a process for defibrating flax fiber, which may bring linen into the tire field as a rival of the cotton fabrics that we now use.

Under this new process it is possible to get 400 pounds of defribrated flax stalks, ready for spinning, from an acre of ground. Now the average yield of cotton is not much over 175 pounds to the acre. Hitherto the cost of producing linen cloth has run to about three times as much as cotton. This has prevented the use of linen materials as the fabric base in tires.

If continued experiments prove that the flax can be produced, to compete with or supplant cotton in the tire industry, there is no reason why it should not become an important crop in the United States. One advantage that flax possesses over cotton is that it does not attract the boll weevil. Harvesting is easier than in the case of cotton and the flax crop yields both fiber and oil.

Should flax assume an important place in our national crop list, it would be a boon to certain areas of the South, so long the thrall of cotton and the victim of the boll weevil.

ROCHESTER SHOW OPENS WITH $850,000 PARADE

Rochester, N. Y., Jan. 21.—Heralded by an $850,000 parade of new cars through downtown streets, the twenty-third annual "million dollar" Rochester Automobile Show got under way for a week at Edgerton Park this afternoon. Robert J. Menzie, secretary of the Rochester Automobile Dealers' Association, is general manager.

Mark Graves, state tax commissioner, was chief speaker at a dinner of state, county, city and association officials inaugurating the show.

The committee in charge of the show includes J. E. Hansen, president of the Rochester Automobile Dealers' Association; George E. Wyman, Charles W. Frisbie, James J. Williams, Charles P. Gallagher, George J. Wagner and E. M. Alling.

CANADIAN NATIONAL SHOW IS UNDERWAY

Montreal, Jan. 21.—The 1931 National Motor Show of Canada has opened in the Stadium with a record exhibit of the latest models of automobiles, trucks and accessories, which cover three floors. By special arrangement models on display at the New York show were shipped to Montreal.

COMING EVENTS

JANUARY

17-24—**Boston.** Automobile Show.
17-24—**Detroit, Mich.** Annual Show, Convention Hall.
17-24—**Hartford, Conn.** Automobile Show, at state armory.
17-24—**Montreal, Can.** National Motor Show of Eastern Canada at Stadium.
17-24—**Baltimore, Md.** Automobile Show.
17-24—**Pittsburgh, Pa.** Automobile Show.
19-22—**Chicago.** National Wheel and Rim Association convention at Edgewater Beach Hotel.
19-24—**Detroit, Mich.** Society of Automotive Engineers' annual meeting.
19-24—**Omaha, Neb.** Automobile Show.
19-24—**Elmira, N. Y.** Automobile Show at Armory.
19-24—**Niagara Falls, N. Y.** Automobile Show.
19-24—**Omaha, Neb.** Automobile Show.
19-24—**Louisville, Ky.** Automobile Show.
19-24—**Rochester, N. Y.** Automobile Show.
21-22—**Milwaukee, Wis.** Wisconsin Petroleum Association meeting.
23-24—**Oklahoma City.** Oklahoma Petroleum Marketers' Associtaion meeting.
24-31—**Chicago, Ill.** National Automobile Show.
24-31—**Altoona, Pa.** Automobile Show at Jaffa Shrine Mosque.
24-31—**Allentown, Pa.** Automobile Show sponsored by Lehigh Automobile Trade Association.
24-31—**Cleveland.** Automobile Show.
24-31—**Washington, D. C.** Automobile Show.
24-31—**Albany, N. Y.** Automobile Show.
24-Feb. 1—**Los Angeles.** Automobile Show.
26-27—**Chicago.** National Automobile Dealers' Association convention.
26-31—**Springfield, Mass.** Automobile Show.
26-31—**Syracuse, N. Y.** Automobile Show at Armory.
26-31—**Portland, Maine.** Automobile Show at Exposition Building.
28-31—**Harrisburg, Pa.** Automobile Show.
29-30—**Grand Forks, N. D.** North Dakota Division, Northwest Petroleum Institute meeting.
31-Feb. 7—**San Francisco.** Automobile Show.

FEBRUARY

Jan. 31—Feb. 7—**Twin Cities.** Northwest Automobile Show, jointly sponsored by St. Paul and Minneapolis at the Minnesota State Fair Grounds.
2- 7—**Scranton, Pa.** Automobile Show.
2- 7—**St. Louis.** Automobile Show.
3—**Minneapolis.** Auto Trade Association convention.
7-14—**Los Angeles.** Automobile Salon.
7-14—**Kansas City.** Automobile Show.
9-14—**St. Petersburg, Fla.** Automobile Show at Winter Garden.
9-14—**Duluth, Minn.** Twin Ports Automobile Show, held by Duluth and Superior, Wis., dealers.
9-14—**Denver, Colo.** Automobile Show.
11-13—**Chicago, Ill.** American Society of Mechanical Engineers' fuel meeting.
14-19—**Indianapolis.** Automobile Show at State Fairground.
16-20—**San Francisco.** Society for Steel Treating National Western Metal and Machinery Exposition.
21-28—**San Francisco.** Automobile Salon.
21-28—**Quebec, Canada.** Automobile Show.
22-March 1.—**Los Angeles.** Pacific Coast Transportation Exposition at Shreve Civic Auditorium.
23-28—**Des Moines, Ia.** Automobile Show at Coliseum.
24-26—**Columbus, O.** Ohio Petroleum Marketers' Association meeting.
24-March 1—**Seattle, Wash.** Automobile Show at Civic Auditorium.
25-March 2.—**Camden, N. J.** Automobile Show.

MARCH

6-15—**Geneva, Switzerland.** Eighth Swiss International Automobile Show.
7-14—**Brooklyn, N. Y.** Automobile Show.
9-14—**Wichita, Kan.** Automobile Show at Forum.
11-13—**Detroit, Mich.** Michigan Oil Men's Association meeting.
16-22—**Los Angeles, Cal.** Second Annual Oil Equipment and Engineering Exposition.
19-21—**San Antonio, Tex.** Sixteenth annual meeting, American Association of Petroleum Geologists.
30-April 2—**Indianapolis, Ind.** Eighty-first meeting, American Chemical Society.

MAY

4- 9—**Charlotte, N. C.** Good Roads Convention.
9-Aug. 9—**Berlin, Germany.** International Garage Exposition.

Contemporary Comment

PROBABLY the world's largest collection of industrial educational motion pictures is circulated by the Bureau of Mines, Department of Commerce, yet it is far from large enough to meet the demand for showings, it was stated orally, January 15, by M. F. Leopold, of the bureau's moving picture production section. Many of the films are booked months in advance.

The films, covering nearly sixty subjects pertaining to the mineral and allied industries, are sought chiefly by educational institutions, including not only grade and high schools, but also prominent universities and colleges, Mr. Leopold said. Engineering and scientific organizations, civic and business societies, churches, clubs and workers' groups likewise view the films in considerable numbers.

Mr. Leopold estimates that 2,500,000 persons saw these educational films last year at about 11,000 separate showings. The bureau, at the beginning of 1931, had more than 700 sets of films, totaling approximately 2,100,000 feet in length and representing an investment of about $1,000,000, all of which has been paid by co-operating industrial concerns.—**United States Daily.**

DODGE BOAT ANNOUNCES CHANGES IN PERSONNEL

New York, Jan. 21.—Kenneth M. Smith, managing director of the Horace E. Dodge Boat and Plane Corporation of New York and Newport News, Va., announces the following changes in Dodge personnel:

William M. Horn, secretary and treasurer, has been placed in full charge of all matters concerning engineering, tests, inspection and service at the factory at Newport News.

Earl Hatton, formerly production manager, has been appointed works manager and has been placed in charge of all manufacturing operations at the Newport News plant.

J. Clark, III., formerly factory service manager, has been appointed national service manager of the company, with headquarters at Newport News.

B. H. Dreyer has been added to the Dodge organization as chief of the accounting depatment at Newport News.

G. W. G. Boyce, formerly with the J. A. Jensen Auto Sales, Inc., Bronx Dodge distributor, has been transferred to the sales staff at Dodge National sales headquarters, 21 West 46th St., New York.

U. S. OFFICIALS TO ATTEND PANAMA HIGHWAY MEETING

Washington, Jan. 21.—E. W. James, chief of the division of transport of the U. S. Bureau of Public Roads, is en route to Panama to attend the second meeting of the Inter-American Highway Commission for a survey of the route of the inter-American highway between Panama and the United States. Thomas A. Forbes and D. Tucker Brown, highway engineers of the U. S. Bureau of Public Roads, are cooperating with the governments of Panama and Honduras in making surveys. To provide for making reconnoisance surveys by the United States in co-operation with the governments of Central and South America, Congress has appropriated $50,000.

ATLANTIC CITY BARS VEHICLE JUNK YARDS

Atlantic City, N. J., Jan 21.—Motor vehicle junk yards will be barred from city limits under an ordinance offered by Mayor Bacharach and passed on first reading.

This action was taken as a result of complaint that certain persons were dumping worn-out automobiles and parts on open lots adjacent to Absecon Boulevard.

The proposed ordinance will prevent the dumping of any car parts on any open lot without the consent of the owner. A fine of $100 will be the penalty.

NEW DISTRIBUTOR FOR PIERCE-ARROW NAMED

New Orleans, Jan. 21.—Announcement of its appointment as distributor for Pierce-Arrow cars for the New Orleans territory was made here by Capital City Auto Company, Studebaker distributor. Capital City Auto Company recently erected a service building costing upward of $100,000.

ALABAMA A. T. A. PLANS CAMPAIGN AGAINST HARMFUL LEGISLATION

Montgomery, Ala., Jan 21 (UTPS).—The Alabama Automotive Trades Association, consisting of the leading dealers of the state, in annual session here made plans for a campaign against certain legislation which would be harmful to the industry and people and recommend dustry and people and recommended to the Legislature now in session.

A reform of the present method of licensing automobiles was one of the topics favored and the body favored a method whereby the motorist buying a new car after the regular tax paying time would be taxed according to the number of remaining months in the year.

Still another bill is the exemption of all ad valorem taxes on motor vehicles for which proper license tags have been obtained by owner, which would eliminate assessments by the owner on his car annually.

At the annual election of officers, Cleve Stokes of the People's Auto Company, Montgomery, was re-elected president. Mrs. Grace R. Scott was retained as secretary.

SHOW PLANS COMPLETED FOR ATLANTIC CITY

Atlantic City, N. J., Jan. 21.—Final plans for the holding of the automobile show February 7 to 14, inclusive, in the ballroom of the Auditorium have been completed by the Automobile Trades Association of Atlantic City at its pre-show dinner meeting in Herman's restaurant.

Actual location and placement of the cars and exhibits was agreed upon by the show sponsors and all equipment must be placed in the spaces by 2 p. m., February 7, when the display opens.

The ballroom is capable of accommodating close to 100 cars. The exhibits of motorcycles, boats, airplanes and accessories will have spaces alloted to them at the entrance and in the lobby.

PITTSBURGH SHOW CROWD 20% LARGER THAN 1930

Pittsburgh, Jan. 21.—The annual Pittsburgh Automobile Show opened Saturday, with 20 per cent. increased attendance over last year. John S. Herron, president of the City Council, made the opening address. Much interest is being shown at this year's show, which is the biggest and best in Pittsburgh automobile history.

TWO NEW HUDSON-ESSEX DEALERS IN PORTLAND, ORE.

Portland, Ore., Jan. 21. — Announcement of two new Hudson-Essex dealers has been made by the Hudson Motor Company concurrently with the introduction of the new 1931 line of cars. The Greater East Portland Motors, Inc., at Grand Avenue and Couch Street, and the Grimm, Schneider and Bacon Company, at 11th and Burnside Streets, are the new dealers.

Success

indelibly written in their records

Norman de Vaux
MANUFACTURER

THE RECORD OF NORMAN DE VAUX

Pioneer automobile merchandiser and manufacturer . . . Veteran General Motors executive . . . Organizer and for several years President, half-owner and General Manager of Chevrolet Motor Company, Pacific Coast factory . . . Was President, General Manager and Executive Owner of Durant Motor Co., California Plant. Responsible for Durant success in the Far West.

THE RECORD OF COL. ELBERT J. HALL

Co-designer of the famous Liberty Motor . . . World-renowned authority on internal combustion engines . . . Founder of Hall-Scott Motor Company, manufacturing engines of his own design . . . Former Consulting Engineer to Ford Motor Company, General Motors Corp., International Harvester Co., Caterpillar Tractor Co. and American Car & Foundry Co.

Col. Elbert J. Hall
ENGINEER

These practical and successful men have made the new DeVaux 6-75 *the medium through which they have expressed a vast fund of years-ahead ideas* developed through decades of distinguished service to the Automotive Industry. *You are invited to visit them at the De Vaux Exhibit in the Auditorium Hotel, Chicago, and personally discuss with them the details of the De Vaux franchise.*

First Public Showing

Auditorium Hotel, Chicago January 24-31

DeVaux 6-75

70 TO 80 MILES AN HOUR

Prices Start at

$545

F.O.B. Grand Rapids, Mich.

CONFIDENTIAL INQUIRY

For those who will not visit Chicago during the Automobile Show.

General Sales Manager,
DE VAUX-HALL MOTORS CORP.,
Grand Rapids, Michigan

Sir: Kindly forward me complete information on the DeVaux Franchise.

Name_____

Address_____

_____

Now Handling_____

A. W. Childs Sees Progress In Design of Motor Cars

Special from A. D. N. Washington Bureau

WASHINGTON, Jan. 21.—"Automobile usage and highway construction go hand in hand and both will continue to play leading roles in the economic development of all nations," A. W. Childs, chief of the automotive division of the Department of Commerce, said today.

Belief in the physical development of the automobile was also voiced by Mr. Childs.

"The machines of today, which we believe to be powerful, comfortable, of pleasing appearance, sleek lines and efficient operation, will compare with cars manufactured ten years from now as the product of the late but gay '90s compares with present day models," he said.

"The human urge to activity, to see new faces and places, means that peoples all over the world are demanding more and more suitable roads for automobile traffic between cities, estates and countries," he continued. "As people buy more automobiles, the demand for road mileage is answered by increased construction and improvement. The great highway mileage in America and the huge number of automobiles in the United States at present make it difficult for us to visualize countries where roads, as we know them, are few and bad, and the automobile is the only means of mechanical transportation over large areas. Yet that is the situation in various sections of the world, and every inhabitant of such countries, whether Argentine, Arab or Alaskan, has an interest in bending every effort to get good roads for his country.

"Despite widely varying totals and conditions regarding road mileages, automobile registrations and automotive purchasing power, a world survey discloses a very definite ratio of motor registrations to road mileage.

"When we look for reasons for unusually high motor registrations in a given country, we usually find that there is a definite highway program. In the United States there are 3,000,000 miles of roads open to automobile traffic. This gives us approximately one mile of road to every square mile of territory and 8.17 automobiles to every mile of road. By comparison we find that the total world ratio is 4.1 automobiles to every mile of road. The Americas, as a whole, have a ratio of 7.1, Asia .43, Africa 1.09, Europe 1.69 and Australia 2.03.

"The lower ratio figures are in accord with total world registrations of automobiles. In general, it is found that wherever we have a low ratio of automobile registrations we also find a small highway mileage. In some countries, however, automobiles have far outstripped highway construction; but generally, when such is the case, we find a heavy concentration of motor vehicles in several large centers of population.

"In Cuba, for example, there are approximately twenty-four motor vehicles and twenty-six square miles of territory to every mile of road; in Panama there are nineteen motor vehicles to every mile of road—but only one mile of road to every ninety-five miles of territory. There is also a pronounced concentration of vehicles in the Canal Zone. Similarly, in Venezuela there are seven motor vehicles to every mile of road, but only one mile of road to every 178 miles of territory. But in both Cuba and Venezuela road building programs are being pushed. Automotive registrations in Venezuela have increased by leaps and bounds in the last five years.

"In Africa we find the low ratio of 1.09 vehicles per mile of road for the continent as a whole and one mile of road to 40,000 miles of territory. Egypt is the exception on this continent with eight vehicles to every mile of road (the American ratio), but the concentration of the vehicles in Cairo and Alexandria is pronounced.

"Europe shows greater uniformity and a ratio of highway mileage to area that approximates the United States. Italy, Latvia, Poland and the Netherlands all have approximately the same road to area ratio as the United States, but lag in total registrations. Austria has one mile of road to every 1.52 square miles of area and 1.36 vehicles per mile of road. Denmark has virtually two miles of highways to every square mile of area and 3.08 vehicles to every mile of road. France and Great Britain also show two miles of road to every square mile of area, with 2.71 and 7.23 vehicles to the mile, respectively.

"Europe, as a whole, has not reached the stage of motorization attained in the United States, although certain countries approach the United States ratios. In the United Kingdom, Belgium and Switzerland, the total number of motor vehicles per mile is almost equal to that in the United States. The more densely populated countries, in general, show a greater highway and automotive development.

"Though conditions vary greatly in Asia, the total average is less than one car to every two miles of road and less than one mile of road to every 10,000 miles of territory. The tremendous possibility of expansion in Asia, when economic development comparable to that of Europe or the United States is reached, is at once apparent.

"Australia, despite its vast size, has one mile of road to every ten miles of territory and two motor vehicles to every mile of road, a motorization comparable to that of some of the densely populated industrial countries of Europe.

"Compared with 1925, automotive registrations the world over show a gain of over 30 per cent. in 1930. In the United States the gain has been about 25 per cent. In some countries where highway development has been of more recent origin we find automotive gains of from 80 to 430 per cent. The greatest relative gains are in Latin America, where automotive registrations have made highway development an imperative necessity.

"The world wide economic depression of 1930 has retarded extension of both highway programs and automotive registrations, and preliminary reports for 1930 show comparatively small gains over 1929 in both highway mileage and automotive registrations. But, with the return of normal times, we should see the forward march of automobile registrations in all parts of the world."

In the Bus Field

NEW BUS LINE PLANS TEN TRIPS DAILY

Paulsboro, N. J., Jan. 21.—The operation of a new bus line by the G. R. Wood Company, Inc., between Paulsboro, Gibbstown and Chester, Pa., over the Bridgeport-Chester ferry, was announced today. Ten trips a day, with two-hour service each way, is the schedule under which the new line will operate. It is the first regular bus service to be established over the Bridgeport-Chester ferry, according to officials of the bus company.

PLAN BUS EXTENSION

Olean, N. Y., Jan. 21.—The Hornell-Allegany Motor Coach Company, operating interurban bus lines along the southern tier of New York, has plans under way to extend its line from Hornell westward to Olean, N. Y., where connections will be made with lines operating to Jamestown, Buffalo, N. Y., and Bradford and points south in Pennsylvania.

GETS BUS PERMIT

Stamford, Conn., Jan. 21. — The Connecticut Company has been granted permission by the Public Utilities Commission to operate a motor bus route between this city and Darien.

CHANGE IN OWNERSHIP

Winston-Salem, N. C., Jan. 21.—The bus line between Lenoir and Blowing Rock has been purchased by the Statesville-Salisbury Coach Company. The new owners have assumed possession and are now in charge of operation. This announcement is made by E. L. Kiser of Rural Hall, who, with E. A. Griffin and Cheeves Shouse, form the company. The distance covered between the two places is forty-four miles.

NEW BUS TERMINAL

Kokomo, Ind., Jan. 21.—Opening of a new bus station, which will be a terminal for all bus lines entering the city, was announced here, and will be in operation within a few days. Frank Kern, formerly of Rochester, has been named general agent.

NEW BUS CONCERN

Jersey City, N. J., Jan. 21.—I Dern, Inc., to operate a bus service in Jersey City and capitalized at $100,000, has been formed by Isadore Dern and Anna Dern, Jersey City, and Leon Dern, Balonne.

GETS PACKAGE PERMIT

Indianapolis, Ind., Jan. 21.—The American Stages, Inc., have been authorized to carry small paskages for delivery on Indianapolis-Crawfordsville passenger bus line, in an order issued by the Public Service Commission.

BUYS THREE BUSES

Birmingham, Ala., Jan. 21 (UTPS)—Three twenty-nine passenger White buses have been purchased by the Birmingham Electric Company to run between 1st Avenue from 57th Street, via Georgia Road, to city limits, replacing electric trolley cars. Service is to be started May 1 by the buses.

N. J. LEGISLATURE GETS NUMEROUS BILLS AIMED AT GAS TAX AND BUSES

Trenton, N. J., Jan. 21—Numerous bills aimed at the gasoline tax moneys and buses in this state have made their appearance before the 1931 session of the Legislature with many others expected to appear before February 10, the last day in which bills may be filed.

The New Jersey Automotive Trade Association, the Track Club of New Jersey and state automobile clubs are keeping a watchful eye on any legislation detrimental to the industry.

Among the bills introduced are the following:

A bill which would require municipalities to carry liability insurance covering operation of all motor vehicles owned by it, including police and fire apparatus, in the amount of at least $10,000.

At present, municipalities are permitted to carry insurance, but it is not mandatory. Municipalities are not responsible for any negligent acts of their employees committed during the operation of motor vehicles or horse-drawn trucks, but the drivers are exposed to personal liability even though in the performance of duty.

Repeal of the Gospill act, by which traction and bus companies may deduct from municipal taxes fares paid by police and firemen.

A bill designed to establish an annual fund of $5,000,000 from motor vehicle receipts to be allotted by the State Highway Commission to the several counties for road aid. Under the bill, the amount thus set aside would become a dedicated fund over which the Legislature would have no control.

Another bill authorizes the highway board to set aside 1 per cent. of the total moneys expended on construction work for the preceding year for roadside beautification. The amount thus available for tree planting and other scenic improvements is estimated by Davis at approximately $300,000.

A bill which would prevent the increase of fare on any bus or street railway within the state.

A companion bill would compel traction companies to keep books showing the receipts from buses separate from those of trolley cars.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

CUMULATIVE NEW PASSENGER CAR

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising desiring county, city or town lists, or lists of owners in any given Some of this data has been published previously, but it is

States	Auburn	Austin	Buick	Cadillac	Chevrolet	Chrysler	Cord	De Soto	Dodge	Durant	Essex	Ford	Franklin	Gardner	Graham	Hudson	Hupmobile	Jordan	La Salle	Lincoln
Arkansas					22	4		1	2	1		28								
Colorado		8	48	4	195	18	1	6	16	6	19	216	4	1	16	9	13		2	3
Conn.	9	4	90	22	337	37	1	42	45	4	46	293	4		5	31	20		5	2
Delaware		1	26	5	105	9		1	3	5	14	123	1			4			3	1
Florida	5	21	113	20	1053	60	4	18	36	4	66	1017	14		41	34	14		7	4
Idaho			7		72	5		5	8	6	2	63			4		1			
Illinois	189	2	139	52	703	68	9	30	94	10	94	804	16	2	37	35	22		40	21
Minn.	1	1	50	12	545	24		6	17	6	26	442			22	16	4		4	2
N. Hamp.	1	1	8	1	25	1		2	1	2	2	43	2			2	2			2
†N. Jersey	6	3	73	21	256	39	2	12	36	10	33	243	5	1	9	10	11		10	
N. Ca'lina	4	8	79	5	919	44	1	17	57	5	68	903	3		8	26	2		2	2
N. Dakota					32	1			1		4	49			1					
Okla.	1	3	70	8	614	22		8	47		8	426	4		11	7	4		5	
Rh. Island		3	36	6	107	19		19	8	3	24	150	5		2	8	6		5	
S. Ca'lina		1	27	1	412	25		14	17		15	421			2	7	4		1	
So. Dakota		1	9	1	97	3		1	14	6	1	110	1		2	1	2			
W. Va.	2	4	33	3	404	29		12	49		37	334		1	11	14	7		4	4
Wis.	6	4	107	11	754	47	3	25	73	14	50	583	1		17	34	5		6	2
D. of Col.	7	1	46	5	236	13		6	27	4	20	341	6		13	6	13		8	3
Total	231	66	961	177	6888	468	21	225	551	86	529	6589	66	5	201	244	130		102	46
Ark., '29			3		54	4		2	16	1	3	77								
Col., '29	7		67	3	108	24		12	31	24	31	234	4		12	11	28		3	
Conn., '29	14		63	23	182	46		43	214	6	74	273	10	3	34	23	36	2	20	6
Dela., '29	3		22	8	60	5		7	7	8	12	146				4	10		7	
Fla., '29	7		130	9	581	55	2	18	53	3	76	1093	3		42	48	26	1	27	1
Idaho, '29	4		18		149	4	1	5	41	14	9	258			7	2				
Ill., '29	23		262	50	542	157	15	65	467	35	189	1372	31	4	65	123	91	2	67	46
Minn., '29			49	3	407	37		26	51	41	59	771	1		10	17	9		8	1
N. H., '29	1		10		19	5		3	12	5	11	59	3		2	5	1		1	
N. J., '29	5		69	14	136	46	2	17	107	7	43	260	5		8	14	26	1	22	5
N. C., '29			108	8	908	115	1	46	149	30	101	1684	8		28	43	12		9	4
N. D., '29			3		49	2		1	2	3	2	111			1	1	1			
Okla., '29	6		245	8	1173	55	2	46	363	23	54	2090	4		34	14	31		18	2
R. Isle., '29	4		44	9	59	23	1	31	28	9	15	88	4		12	5	4		9	2
S. C., '29			28		342	12		13	13	1	15	491	1		3	12	5			
S. D., '29	2		17		202	8		6	30	11	15	339			7	6	16			
W. Va., '29	4		55	4	343	40		32	107	15	110	578	4		49	20	26	2	3	3
Wis., '29	2		143	13	483	53	4	30	291	23	93	852	3		27	49	32	3	16	4
D. of C., '29	8		38	5	125	28		9	42	8	35	319	3		29	18	13	1	6	7
Total, '29	90	*	1374	157	5922	719	28	412	2024	267	947	11095	84	7	370	415	367	12	216	81

*Not in production at that time. †Returns herewith are for two weeks only, balance of month included in the January report.

Spurt in Manufacturing In Western Connecticut

BRIDGEPORT, CONN., Jan. 21.—**Automotive plants in the western Connecticut area are showing a decided spurt in production as the new year gets under way. A survey of the larger factories handling automotive products shows an optimistic attitude on the part of executives based upon increased orders and good prospects for the spring. Increases in car production at Detroit have naturally benefited manufacturers of parts and accessories and machine tools used in the industry.**

Bridgeport Coach Lace Company, manufacturer of automobile upholstery and fabrics, has received releases on a number of large orders held up for some months, according to Earl J. Morrell, secretary. A decided pick-up has been noted in the past thirty days.

Sale of tire chains is reported as fairly good at the Bridgeport plant of the American Chain Company. Inauguration of a partial payment plan on machine tools manufactured by the Bullard Company, Bridgeport, has attracted interest and new production is being carried on satisfactorily, according to Henry A. Gamelin, advertising manager. Prospects are very good, he reports.

Gasco Products Corporation, Bridgeport, is enjoying good volume, with an exceptional demand for the windshield defroster made by the concern, according to J. H. Cohen, president. February prospects are described as excellent.

Demand for top materials so far in January is holding well up to the December average at the E. I. du Pont de Nemours Company plant, Fairfield, according to F. Welton Hotchkiss, advertising manager.

Norwalk Tire and Rubber Company, Norwalk, has returned to a five-day weeek schedule after operating for some time on four days. A slight improvement in business has been noted. The concern's inventory is reported at the lowest point in history.

The situation is somewhat brighter than heretofore in the heavily industrial section, including Meriden and New Britain. Factories have reopened after Christmas and inventory lay-offs and production is on a more normal basis than before the holidays. The Cuno Engineering Company, Meriden, is reported as being busy. This concern had no general shutdown over the Christmas period.

ALUMINUM INDUSTRIES INCREASES ADVERTISING

Concinnati, Jan. 21.—Accompanying announcement of the retention of the Clark, McDaniel, Fisher and Spellman Advertising Agency of Akron and Cleveland, as advertising and merchandising counsel, officials of Aluminum Industries, Inc., issued a statement to the effect that the company's advertising program for 1931 would be increased considerably.

A substantial budget has been planned for jobber and dealer help, in distribution of Permite products, while the appropriation for space in national mediums, directed to manufacturers, jobbers and dealers, will be greatly in excess of that of 1930. Additional field representation, in the effort to aid jobber and dealer merchandising plans, also is included in the company's schedule.

In making the announcement vice-president and general sales manager F. J. Glennon declared, while 1930 was a surprisingly good year for aluminum industries, 1931 is expected to set a new high record. The company's 1930 business shows an increase over 1929.

OUTLOOK FOR TIRE INDUSTRY IS BRIGHT

Akron, O., Jan. 21.—Following the release of the Union Trust Company's publication, Trade Winds, which predicts a 14 per cent. increase in tire production for 1931, a local rubber company official stated that few industries give brighter promise than the rubber industry in 1931.

The article states that American rubber manufacturers are pinning their faith in 1931 for a replacement business of some 42,000,000 casings, or, in other words, it is expected about 40 per cent. of the American motorists will buy an average of four new tires this year, or 1.5 tires for every registered motor vehicle in the country. The market for new equipment is conceded to be expanding to a point that indicates a demand for 16,000,000 new tires and tubes.

If a 14 per cent. production increase is attained it will mean about 61,000,000 casings for this year, as compared with 53,500,000 in 1930.

Regardless of the recent price reductions on tires, officials of the larger companies and those in close touch with the industry in the business world are confident that by reason of diminished inventory losses, rock bottom prices for raw material and cheapened labor costs, the major manufacturing companies will pile up greater profits during the year and will hold employment at a higher level.

A production of 4,000,000 new cars and trucks is essential to this program, but automobile plant executives corroborate that estimate.

It is recognized, of course, that there is vital need of co-operation in a program to bring actual prosperity in the way of earnings to the tiremaking companies and this involves elimination of destructive competition, of course.

AUTOMOTIVE INDUSTRY LARGEST ALUMINUM USER IN 1929, CENSUS SHOWS

Washington, Jan. 21.—The aluminum industry reported a gross business of $152,621,000 for 1929, of which 76 per cent., or $115,960,000, went to industrial consumers, the largest portion of which were automotive manufacturers, the United States Census Bureau announced today.

The remaining sales were made as follows: Fifteen per cent., or $22,977,000, to retailers; 7.4 per cent., or $11,266,000, to wholesalers and 1.6 per cent., or $2,418,000, direct to home consumers.

Of the total sales of $152,621,000, 2.2 per cent., or $3,386,000, was made through manufacturers' agents, selling agents, brokers and commission houses.

A total of 149 establishments were classified in the production of aluminum products, such as motor vehicle accessories and parts, castings, rolled forms, wire ingots, etc.

CRUDE RUBBER STOCKS AT RECORD HIGH LEVEL

New York, Jan. 21.—Stocks of crude rubber in the United States on December 31 were the highest on record, amounting to 203,221 long tons, against 189,925 tons on November 30 and 105,137 tons on December 31, 1929. Crude rubber afloat for United States ports on December 31 totaled 56,035 tons, against 52,538 tons November 30 and 62,388 tons December 31, 1929.

Consumption of crude rubber in the United States in December totaled 21,493 tons, against 23,479 tons in November and 23,531 tons in December, 1929. Consumption in 1930 totaled 372,628 tons, against 469,805 tons in 1929 and 441,339 tons in 1928.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

REGISTRATION STATISTICS, DECEMBER, 1930

Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers section, may obtain these by addressing any of these three companies given here complete for the convenience of our subscribers

States	Marmon	Nash	Oakland	Oldsmobile	Packard	Peerless	Pierce-Arrow	Plymouth	Pontiac	Reo	Studebaker	Stutz	Viking	Whippet	Willys	Willys-Knight	Miscellaneous	Totals
Arkansas		1	1		1			3	1								1	66
Colorado	8	21	4	11	6		3	11	15	2	11	1	1	5	10	3		697
Conn.	11	38	15	7	28	2	8	25	32	10	27	3	1	3	11	5		1,223
Delaware	3	5	1	1	7			6	15	1	4				4			348
Florida	4	60	8	16	16		4	45	43	18	36			9	18	3		2,811
Idaho		5	1	1	1			7	4		5		1	1	3			202
Illinois	21	111	8	25	87	5	25	46	63	27	138	6	1	8	21	14	14	2,987
Minn.	4	22	8	8	3	1		31	35	6	26			7	27	3		1,359
N. Hamp.	1	6		2	1		1	1		1	3			1	1			113
N. Jersey	7	53	2	12	16	1	9	14	11	11	39	1	1	2	4	10		973
N. Ca'lina	2	22	3	8	12		4	46	45	1	22		1	8	10	1		2,338
N. Dakota		1	3	2				2	3		1				4			104
Okla.	1	15	7	10	11		1	11	27	7	7			2	10	5	2	1,354
Rh. Island		18	4	8	10	2	7	12	7	17	20			4	5	6		521
S. Ca'lina	1	12	1	5	3			14	13	5	7			1	3	1		1,013
So. Dakota	1	4	4	12				10	3	1	9			1	4		1	299
W. Va.	22	33	10	13	9	1		48	34	18	19			10	23	2		1,190
Wis.	7	113	20	34	14	1	4	56	62	15	60	2	3	7	43	7	7	2,197
D. of Col.	3	15	6	11	18	36	5	13	13	5	29			1	7	7	8	932
Total	96	555	106	186	243	49	71	401	426	145	463	13	9	70	208	67	33	20,727
Ark., '29	1	2		2				5	2					5				177
Col., '29	11	32	4	14	7		6	19	20	5	11	3		25		13		769
Conn., '29	15	62	17	36	34	6	6	40	65	20	46	4	1	12		9	10	1,455
Dela., '29		9	3	5	6	1	2	7	19		3		1	7		2		364
Fla., '29	12	37	8	29	42		10	25	54	12	18		2	36		9		2,469
Idaho, '29	1	10	4	13	1			12	10	2	5			8		3	1	582
Ill., '29	28	110	41	121	111	15	16	67	102	21	86	13	8	71		14	70	4,500
Minn., '29	1	17	17	27	14		1	50	67	1	36	2		36		4	2	1,765
N. H., '29	3	10		6	2			8	8	5	4			4		1		188
N. J., '29	6	57	11	35	24	2	13	12	39	4	29	2	2	21		9	6	1,059
N. C., '29	12	39	18	28	12	1	3	67	86	6	24			47		8		3,605
N. D., '29	1	3	5	2				4	16		1			11		1		220
Okla., '29	7	51	32	44	27		7	61	114	15	42	2	4	74		13	2	4,663
R. Isle., '29	1	17	8	13	6	5	5	10	16	9	10		1	10		9	3	470
S. C., '29	6	2	2	5	4		1	18	13		7			6				1,000
S. D., '29	4	10	8	21				23	14	2	10		2	28		2		783
W. Va., '29	23	47	14	35	15	1		50	46	15	18	3		44		15	2	1,723
Wis., '29	4	114	31	55	24	3	9	43	80	9	54	2		45		12	5	2,611
D. of C., '29	4	23	18	24	14	26	6	9	23	4	23			8		4	2	882
Total, '29	140	652	241	515	343	60	85	530	794	130	427	31	21	498	*	128	103	29,285

AUBURN.

The success of the new Auburn line at the New York and other Automobile Shows reflects the thinking, planning, hard work, and policies that came out of the crucible of 1930.

Serious-thinking dealers see even more in the new Auburn line than attractive, new merchandise of greater intrinsic worth and lower prices; they see more than a tremendous public reception for Auburn's line of five new models; they see the results of a *management* that sees conditions as they are and "cuts its cloth" to fit the dealers' needs today.

R. H. FAULKNER
Vice-President

AUBURN

AUBURN AUTOMOBILE CO.
AUBURN, IND.

Production - - Engineering - - Factory -

Oil Cooling and Oil Coolers

The following, in part, is a paper presented before the annual meeting of the Society of Automotive Engineers, which is now in session in Detroit.

By W. R. RAMSAUR
Development Engineer
Harrison Radiator Corporation,
Lockport, N. Y.

Since the introduction of internal combustion engines, the lubricating system has undergone few fundamental changes. At the same time, other parts of the engine have made considerable advancement, which, in many cases, results in high oil temperatures. These changes which directly affect oil temperatures are:

1. Increased horse power.
2. Increased compression pressure.
3. Increased engine r. p. m.

All of these factors impose additional duties on the lubrication system, originally designed to prevent a metal-to-metal contact and to insure a pressure seal.

Engine horse power on automobiles, in some cases, is above 200 horse power, while, on airplanes, horse power in excess of 500 is not uncommon.

During the last five years compression ratios have increased from an average of 4.5 in 1925 to 5 in 1930, or an increase of 11 per cent. Compression pressures have increased from an average of aproximately eighty pounds to 100 pounds, or an increase of 25 per cent., with consequent increase in cylinder temperatures.

The higher engine speeds, resulting in more power per cubic inch, also increase the P. V. factors, which were at one time considered safe at 32,000, but which now, in some instances, run in excess of 60,000.

To properly lubricate an engine, an oil light enough in viscosity to permit easy cranking and a quick circulation to the bearings, regardless of the starting temperature, should be used. A rapid rate of warm-up of the oil is desirable to reduce crankcase oil dilution and aid in lubrication. Under operating conditions, the oil should have high enough viscosity and sufficiently low temperature to insure engine safety and reliability.

Without some method of oil temperature control, from a viscosity standpoint alone, the use of heavy oil to take care of high temperatures will produce high cranking torque and inadequate lubrication under winter starting conditions. If a light oil is used to facilitate cranking and lubrication at low temperatures, this oil will not have sufficient viscosity at high temperatures.

Considering, first, the subject of high oil temperatures, oil temperatures on the road in excess of 300 degrees Fahrenheit have been recorded. High oil temperatures tend to cause the following troubles: 1. Excessive oil consumption. 2. Smoking at exhaust. 3. Fouling spark plugs. 4. Formation of carbon in combustion chamber due to excess oil. 5. Engine wear. 6. Failure of bearings.

The most serious of these troubles is bearing failure. There has been some question as to how much protection a heavy oil furnishes the bearings, but there is no question concerning the fact that Babbitt loses its strength and hardness rapidly with increase in temperature and that cool oil to the bearings will lower bearing temperatures and reduce bearing failure Babbitt loses its strength rapidly with increase in temperature, and the bearings may easily crack and pound out at much lower temperatures than required to melt the Babbitt. In addition, the bonding material, usually tin, will have the same characteristics with the low melting temperature of 445 degrees Fahrenheit.

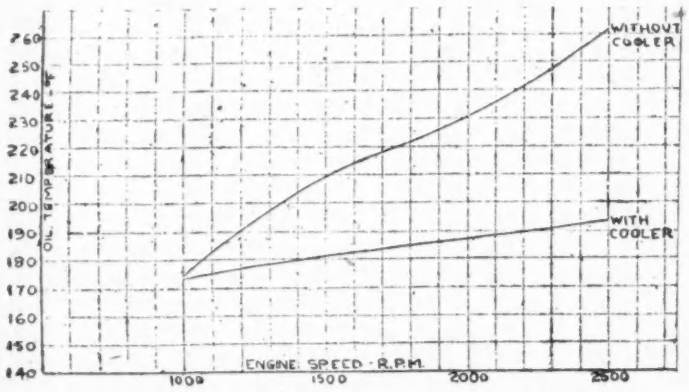


FIG. 1. Comparison of oil temperatures with and without oil cooler

The Bureau of Standards chart of various bearing alloys (Slide 1) shows an average ultimate strength at 77 degrees Fahrenheit of 14,400 pounds a square inch; whereas, at 212 degrees Fahrenheit, the ultimate strength has fallen off to an average of 6,100 pounds a square inch. An average of the above figures shows that each 10 degrees increase in bearing temperature represents a decrease in ultimate strength of 615 pounds a square inch.

Observations made on an engine in the cold room show that, if a heavy oil is used below its pour point, the oil pump will take up only a cavity in the oil reservoir, after which there is no more circulation, except dilution from choking, until the oil has received heat, which does not occur for several minutes.

By the use of a light oil, this so-called dry period of lubrication may be minimized. A light oil furnishes instant lubrication to the moving parts and prevents wear and scuffing of the lubricated surfaces. With the light oil there is no cavitating of the pump at low temperatures. In addition to the lower pour test, the decreased viscosity of the light oil will materially reduce the required cranking torque. Investigation has shown that the required cranking torque was proportional to oil viscosity only, and was not caused by change in engine clearances due to change in temperature.

By the use of a light oil with its viscosity and temperature controlled, dangerously high temperatures, with loss of viscosity, and equally dangerous low temperatures, with inadequate lubrication, are avoided.

Recognizing the necessity of meeting changing conditions, much time and thought have been devoted by automotive engineers to the subject of regulating oil temperatures and to the development of devices to prevent, as far as possible, the lubrication troubles which have been encountered.

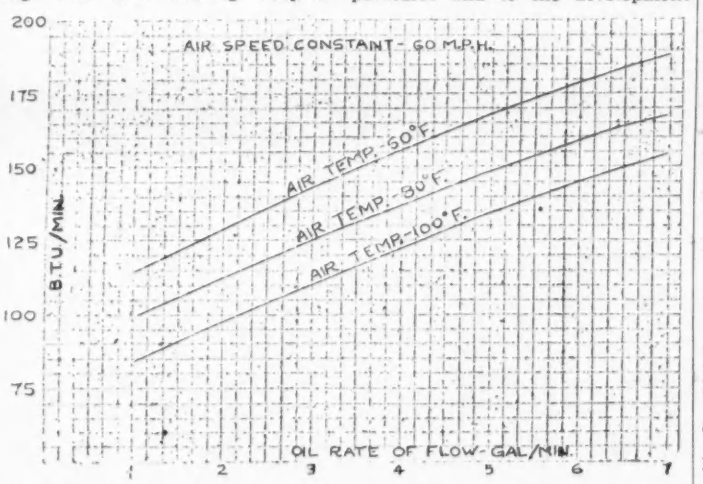


FIG. 2. Air-type cooling—161-tube Viscon. Oil temperature, 210 degrees Fahrenheit. Air speed constant, 60 m. p. h.

In approaching a problem of this nature, we find that on some engines, in order to reduce the oil temperature from above 300 degrees Fahrenheit to a stisfactory temperature of around 210 to 230 degrees Fahrenheit, it is necessary to dissipate heat from the oil at a rate in excess of 250 b. t. u. per min., or a heat equivalent of about 6 horse power.

At the present time, two types of oil cooler are in use. 1). the air-type cooler, and (2) the water-type cooler.

The air-type cooler is largely used on air-cooled motors, especially on airplanes, where its use is quite extensive. The water-type coolers are in more general use on automobiles than the air type.

The requirements of a satisfactory oil temperature control unit are as follows: 1. Warm the oil when cold; 2. Cool the oil when hot. 3. Should be as free from restriction of oil flow as possible. 4. Should be as free

(Continued on Page 10

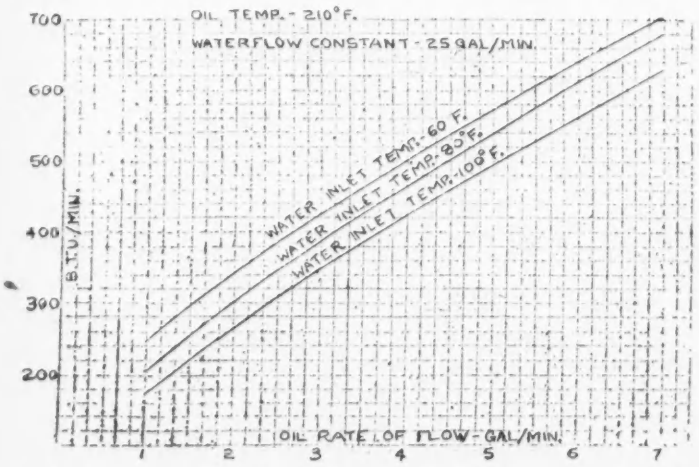


FIG. 3. Water-type cooling—161-tube Viscon. Oil temperature, 210 degrees Fahrenheit

Tentative Program for Western Metal Congress

The following tentative program for the Western Metal Congress, to be held in Sanfrancisco, February 16 to 20, is announced. Howard Taylor, Stanford University, is general chairman of the committee which prepared the program.

FEBRUARY 16

AMERICAN INSTITUTE OF MINING AND METALLURGICAL ENGINEERS.
St. Francis Hotel, 10 A. M.

"Improvements in the Physical Properties in Large Carbon and Alloy Steel Castings," J. Fenstermacher, Columbia division, United States Steel Corporation.

"Manganese Steels," D. H. Young, American Manganese Steel Company.

"The Formation and Elimination of Non-Metallic Inclusions in the Acid Open-Hearth Furnace," C. H. Herty, United States Bureau of Mines, and J. E. Jacobs, Heppenstall Company, Pittsburgh.

"High Test Cast Iron," F. B. Coyle, International Nickel Company.

AMERICAN SOCIETY FOR TESTING MATERIALS
Civic Auditorium, 2 P. M.

"Failure of Machine Parts," L. T. Holt, consulting physical metallurgist, Seattle.

"Metallurgy of Welding," Paul Jeffers, structural engineer, Los Angeles.

"High Strength Steel for a High-Pressure Hydraulic Jack," G. H. Bragg, Pacific Gas and Electric Company.

FEBRUARY 17

SOCIETY OF AUTOMOTIVE ENGINEERS
St. Francis Hotel, 10 A. M.

"Automotive Steels," J. M. Watson, Hupp Motor Car Company, Detroit.

"Automobile Wheels," A. B. Domonoske, Stanford University, California.

"Steel Personality," B. F. Shepherd, Ingersoll Rand Company.

FEBRUARY 17

AMERICAN WELDING SOCIETY
Civic Auditorium, 2 P. M.

"Recent Developments in Welded-on Overlays," Miles C. Smith, Stoody Corporation, Whittier, Cal.

"Welding Aluminum and Its Alloys," W. H. Dunlap, Aluminum Company of America.

"Shape Cut Steel," C. E. Rhein, Linde Air Products Company.

FEBRUARY 18

AMERICAN WELDING SOCIETY
St. Francis Hotel, 10 A. M.

"Structural Arc Welding — A review of what has been accomplished, and its future," A. F. Davis, Lincoln Electric Company.

"Coated Electrodes," Mr. Stroebel, Stoody Corporation.

"Fusion Welding," J. C. Hodge, Babcock & Wilcox Company.

SOCIETY AUTOMOTIVE ENGINEERS
Civic Auditorium, 2 P. M.

"Aluminum Alloys," William M. Holshauer, Aluminum Company of America, Oakland.

"Magnesium Alloys," Dr. W. A. Gann, Dow Chemical Company, Midland, Mich.

FEBRUARY 19

PACIFIC COAST GAS ASSOCIATION
St. Francis Hotel, 10 A. M.

"Gas Furnace for Nitriding," J. H. Knapp, J. H. Knapp Company, Los Angeles.

"Carburizing Steel by Gas," R. G. Guthrie, Peoples Gas Light and Coke Company, Chicago.

"Progress and Development of Fuel-Fired Furnaces," E. G. de Coriolis, Surface Combustion Company.

"Manufacture and Properties of Seamless Steel Pipe," G. P. McNiff, National Tube Company.

FEBRUARY 19

AMERICAN SOCIETY OF MECHANICAL ENGINEERS
Civic Auditorium, 2 P. M.

"Creep of Metals at High Temperatures," P. T. McVetty, Westinghouse Electric and Manufacturing Company.

"Machinability of Metals," A. H. d'Archambal, Pratt & Whitney Company.

"Seamless Rolled Cylinders," H. L. M. Whitney, M. W. Kellogg Company.

FRIDAY, FEBRUARY 20

AMERICAN CHEMICAL SOCIETY
St. Francis Hotel, 10.00 A. M.

"Recent Developments in Corrosion Prevention of Ferrous Metals," F. N. Speller and V. V. Kendall, Pa.

"Chromium and Chromium Nickel Steels," M. J. R. Morris, Republic Steel Company.

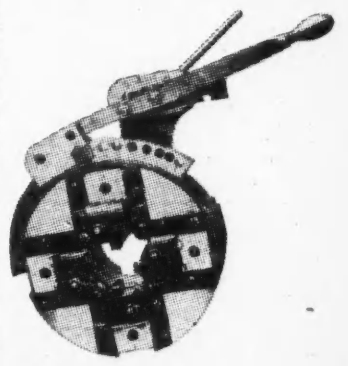
"Corrosion and Lubrication of Valves," George F. Scherer, Merco-Nordstrom Valve Company.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS AND PACIFIC COAST ELECTRICAL ASSOCIATION
Civic Auditorium, 2.00 P. M.

"Electricity in the Steel Mill," G. E. Stolz, Westinghouse Electric and Manufacturing Company.

"The Use of Electricity in the Heat Treatment of Steels," George W. Bernnard, Pacific Gas and Electric Company.

B. & K. ANNOUNCES NEW THREADING DIE HEAD



"BIKEKO" threading die-head

Bignall & Keeler Machine Works, Edwardsville, Ill., has just introduced a new threading die-head. Featured in the design is that a single upward movement of the die lever lifts all dies clear of the pipe and coupling. The positive lock on the screw adjustment insures accurate duplicate threads after the adjustment is once set for a given size. The fine pitch-adjusting screw gives accurate and positive adjustment for standard sizes, it is claimed. High-speed steel dies with curved eccentric relief permit high cutting speeds. The cutting edge is located ahead of the center line. The upper section of the die block is provided with screw adjustment. Die slides have exceptionally long travel, it is stated, permitting one set of dies to handle all sizes within the capacity of the head as long as the taper and thread remain the same. One die can be replaced without renewing the entire set.

ROLLER LEVELER DESIGNED

The Aetna-Standard Engineering Company, Youngstown, O., recently announced a roller leveler designed to produce leveled sheets which are free from chatter marks. The unit incorporates seventeen rolls, with all roll gears mounted direct on the rolls and mounted in oil-tight solid roll housings of cast steel. The top rolls are driven from the gear box by a single spindle of the fast, flexible coupling design. A direct connected shaft from the gear box drives the bottom rolls. Bearings are of the tapered roller type, which permits adjustemnt.

The works and worm wheels of the screwdown for the top roll housing are inclosed in oil-tight cases with through shafts connecting them. Each has adjustable couplings which permit adjustment for parallel alignment.

Equipment - - - Development

Factors in Machine Tool Obsolescence

By L. A. BLACKBURN, J. W. BRUSSEL, A. R. FORS

The following, in part, is a paper presented before the annual meeting of the Society of Automotive Engineers which is now in session in Detroit.

The true meaning of the word "obsolete" is misleading so far as it concerns machine-tool obsolescence. The average person understands the word "obsolescence" to mean worn out or no longer in use. The word obsolescence relates to a fact that is concerned only with the economic value of an article and not its physical condition.

The physical condition of a machine may be as good as the day it was built. In fact, it may never have been used, and still its economic value may not justify setting it up. We can prove this case by an experience that we recently had in setting up equipment for machining a crank shaft. We received a proposal from an automobile company that had new pin and main-bearing grinding machines for sale which had been used for one year. The machines were in perfect physical condition, but, from the standpoint of progress made in their design, more modern machines are available which will produce crank shafts for less money and justify the additional expenditure for the more modern machine rather than to take the practically new machine at a considerable reduction in purchase price. Regardless ofthe cost of the machine failing to meet present-day requirements, obsolescence is equally effective in destroying its value in use, even though it might do just as good work as the day it was bought.

The question of obsolesence is one that has given the manufacturers considerable worry. The government is undertaking to establish facts and figures through the domestic commerce division of the Department of Commerce. The fact that obsolescence differs from depreciation and that a distinct method should be set up for providing against obsolescence as a hazard of business is recognized. The production man should recognize the same fact and provide himself with the information and personnel to keep his equipment on an economic basis. Obviously the manufacturer or production man and the acountant or financial man should set up such records in such a way that the information would be available covering the particular conditions existing in a certain manufacuring unit and be provided with a better basis for actural studies than average data.

Up to about fifteen years ago the factor of depreciation on the major classification of machine tools was equal to or greater than the factor of obsolescence.

Today we believe that the factor of obsolescence is greater than depreciation in production machines. When applied to the automotive industry the standard government allowance is 10 per cent. for depreciation on all equipment. This is an arbitrary figure,,and, so far as we are concerned, we will accept it as accurage enough for government and factory work as a whole. In this factor, mass production, job shops, power-house equipment, conveyors, punch presses and all the long-life equipment is put in with the short-life equipment and averaged. In this group, of course, are machines that have a wide variation of depreciation. Actual depreciation is controlled by good or bad maintenance, selection of the proper size of machine to do the job, tooling, speed and feeds and the number of hours operated per year.

The question then is, "How are we to determine when a machine tool is obsolete?" The same elements enter here which enter into making any other investment yield; the risk must be compensated for in the size of the return. Yield may be divided into two divisions, visible and invisible. The former is represented by the direct savings effected through the use of the new equipment over the old on probable forecast production. The investment yield can not be easily ascertained. It takes the form of greater accuracy, a smaller inventory, or affords the possibility of working a select crew of skilled men rather than a larger force of average ability. Liquidity is a minor factor and is represented by fair salvage value of the equipment. A standard machine for which a larger demand exists has a greater liquid value than one for which the demand is limited.

Policy of Accounting

Three elements, material, labor and burden, enter into the cost of any manufactured article. To get accurate material and labor costs is very simple. Burden is not so simple to obtain and the policy of allocating burden varies to such an extent that probably no two factories will use the same system.

We set up a department with so many machines and occupying so many square feet of floor space and add all the other items of expense that can be prorated to this particular department to get a standard cost on this particular machine. We would like to have actual cost on the operation of this machine. For instance, if we figure on working 200 days per year and nineteen hours per day, we would have a standard cost based on 3,800 hours per year, and the actual cost on a machine used 2,400 hours per year would be very different. The distinction is as between actual cost, or costs as they are, and standard cost, or costs as they should be. On the actual-cost basis a machine may not appear to be obsolete, whereas standard cost would immediately show that it is.

Average burdens are misleading, but the required returns are more misleading. For instance, a return of 6 per cent. on buildings and property is considered fair. Almost any property owner would be glad to rent property and buildings on this basis, but, in accounting, we set up our total investment and say that we want 15, 20 or 30 per cent. return.

Growth of Company

As an automobile company passes from the small to the large producer, the increased capacity of a plant involves many problems. This not only applies to machine-tool equipment, but also to buildings, material-handling equipment and every other facility that is required for economic mass production. Companies that tool up for small production can not afford to use single-purpose machines, as the number of pieces thus produced would not justify the expenditure for single-purpose machines of any kind, except in a rare case, where certain operations can be performed only on single-purpose machines.

An automobile can be built, with a few exceptions, on tool-room equipment; namely, milling, drilling presses, shaping and grinding machines and lathes, but at a prohibitive cost. Small production of automobiles can be obtained with these machines by an expenditure for jigs and fixtures, ranging from a simple to elaborate, at a high cost, but still permissible. As production exceeds the practicability of such methods, we begin to investigate the possibility of combining many machines into one.

Designing Flexible Single-Purpose Machines

About 1920 some tool engineers went to the extreme in designing single-purpose machines or machines built and designed solely to do a particular number of operations on a particularly designed piece. Millions of dollars was spent in designing massive machinery, which, while they would perform the specified operation at a tremendous cost when they ran, were so complicated that a breakdown often required many hours to repair, with a consequent loss of production. A few such instances in a shop immediately gave the machines a bad name, and they obviously became very unpopular and, of course, the idea did not gain very great support from the management.

This, we feel, was more of a flurry, and possibly was brought about by pressure and the desire of those in control of manufacturing to reduce the cost of direct labor and to eliminate a great number of simple machines.

We passed from this step to the point where the machine-tool builders were designing a greater degree of flexibility into so-called single-purpose machines. This experiment was not altogether successful, due to the fact that the spindles were made adjustable so far as spacing was concerned. Problems were brought into the picture which made producing interchangeable pieces over a period of months difficult. At this stage of the game we began to develop tool engineers with mechanical ability, shop experience, familiarity with cost and investment and a little foresight. A machine-tool builder then had some one who could determine the point at which to stop and the number of operations that one machine could successfully perform over a period of time with the least mechanical interruptions and delays. We believe that, with the further development of a proper tool-engineering staff, the two lines drawn on a chart of depreciation and obsolescence are again approaching a point where they will present another real problem to management.

The question now is, "How is the tool engineer to present to the management his problem on the purchase of new equipment to replace obsolete equipment that he now has on hand?" At least twenty-five formulas have been developed, and doubtless are being used by different companies for establishing such facts. (Here the author presented and discussed several of the formulas.)

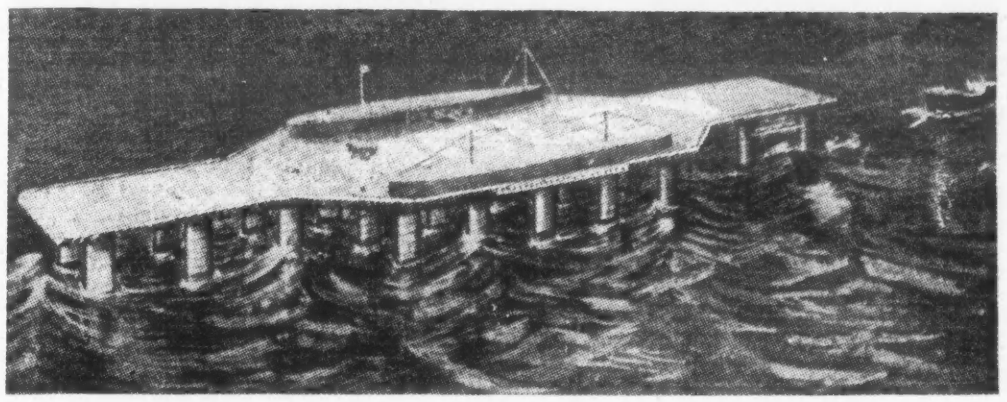
With this array of formulas, arriving at some method of placing before the management the economic value of obsoleting certain equipment and the purchase of new equipment would seemingly be comparatively simple. Our desire in presenting this paper is that we will get much discussion on the relative merits of these formulas and by the exchange of ideas compile such a formula as will be, let us say, bomb-proof to the extent that the average, or, better still, majority of executives will accept its accuracy. Let us quote what Dr. Julius Klein, assistant secretary of commerce, has said in regard to this question.

A factory cannot derive the full benefits and profits that spring from mechanical efficiency unless it keeps its machinery absolutely up to date, following the progress of invention closely and utilizing the very best, most modern devices that science makes available. This means that the men in charge of a manufacturing enterprise must be willing to junk things—to get rid of them summarily when they have outlived their usefulness. And they must calculate matters from the actuarial standpoint, as our insurance friends would say, estimating the life prospects in such a way that they can scrap outworn equipment without suffering any serious financial loss as a result. This is of vital interest to us consumers, because old and inappropriate machinery means higher prices to be paid by everybody.

These junk piles exist because factory managers in general prefer to have the junk piles outside their factories instead of inside and in use.

In conclusion we might say that the subject which we have discussed briefly has been one that could be discussed from many more angles. The development of cutting tools, the extent to which we should go to automatic equipment, the history and development of machine tools could supply statistics by the carload and still we would not have an accurate answer to this problem. To go too far in obsoleting equipment is just as easy as it is not to go far enough. A safe formula would be to buy new machinery only when it costs money not to buy. Then set about to prove it. For this problem to be successfully solved will take the co-ordinated effort and co-operation of accounting, designing and manufacturing departments and the machine tool builders.

Seadrome System Ocean Airways



IN A PAPER PRESENTED before the annual meeting of the Society of Automotive Engineers, which is now in session in Detroit, Edward R. Armstrong, president and general manager of the Armstrong Seadrome Development Company, Inc., Wilmington, Del., pointed out that the establishment of safe and profitable transatlantic airplane operation service is feasible only if floating, landing and service stations are provided at intervals of approximately 350 miles along the route. The seadrome designed to serve at such a station is illustrated, and every detail of it has been worked out on an engineering basis with the co-operation of leading marine architects and shipbuilding, structural and aeronautical engineers. Theoretical calculations have been supported by model and small scale tests. The paper described and illustrated the structural features, methods of fabrication, assembling, towing to location and anchoring

WITH THE S. A. E. TODAY AT DETROIT

AIRCRAFT ENGINE SESSION
C. L. Lawrance, chairman

Fuel Injection with Spark in an Otto Cycle Engine
G. L. Williams, E. S. Taylor and C. Fayette Taylor, Massachusetts Institute of Technology

Increasing the Thrust Horsepower of Radial Air-Cooled Engines
P. B. Taylor, Wright Aeronautical Corp.

CHASSIS SESSION
C. C. Carlton, chairman

Rubber Problems Confronting an Automotive Engineer
R. K. Lee, Chrysler Corp.

Tires and the Rim Riddle
B. J. Lemon, U. S. Rubber Co.

The Development of Drop Center Rims
Charles Ash, Kelsey-Hayes Wheel Corp.

DIESEL ENGINE SESSION
O. D. Treiber, chairman

Combustion Problems and Design of High-Speed Light-Weight Diesel Engines
E. F. Ruehl, I. P. Morris & DeLaVergne, Inc.

Operation and Maintenance of Diesel-Engined Motorcoaches
A. A. Lyman, Public Service Coordinated Transport

DINNER
Detroit Section acting as host to the National Society

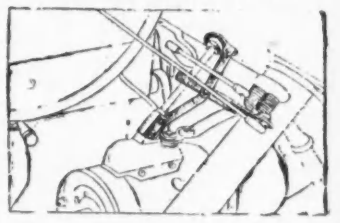
P. J. Kent, toastmaster

Address by Mayor Murphy of Detroit

Address by Mr. Vincent Bendix

Gulliver's Travels Among the Real Lilliputians of the Universe
Larry A. Hawkins, General Electric Co.

INTRODUCES STARTING DEVICE FOR FORDS



SAFE-T-START for Ford Cars

The Hollingsworth Manufacturing Company, Marshalltown, Ia., has introduced a mechanical device, known as the Safe-T-Start. It is attached to the starter switch and connected with the spark control lever in such a way that the last notch of the retarded lever closes the starting switch and cranks the motor. The device is cadmium plated. It is priced at $1.50.

DEVELOPS CYLINDER RIDGE REAMING TOOL

Lisle Manufacturing Company, Clarinda, O., has introduced a new product, a cylinder ridge reamer. The tool is designed to remove the ridge that develops above the travel of the piston rings and is adaptable for engines ranging from 3⅜ inches to 4⅛ inches in diameter. The feed is entirely automatic. Price is $15.

MYSTERY CAR FIRST ENTRY FOR INDIANAPOLIS RACE

Indianapolis, Ind., Jan. 21.—Announcing the first official entry of a car and driver in the international 500-mile automobile race which will be held at the Indianapolis Motor Speedway in May, the management indicated that there are prospects for more cars being named for the running of this speed classic than ever before in its history. Bill White, youthful, though paunchy racing impresario of Los Angeles, makes the first entry—an unnamed mount possessing more or less mystery concerning its mechanical heritage. It will be christened by breaking a can of gasoline over its prow at a later date, White announced. William (Shorty) Cantlon, second in last year's event, is named as the driver for White's 1931 speed creation. Diminutive and daring, Cantlon is rated as one of the most capable speed stars of the present racing generation.

Controlling Lubricating Oil Temperature

(Continued from Page 8)

from plugging as possible. 5. Should be accessible and easily cleaned. 6. Should be capable of withstanding a continuous pressure of, at least, 100 pounds per square inch.

Numerous tests show that after starting most engines there is a considerable lag in oil temperature, as compared with water temperature. If a water-type unit is placed in the water circuit, a rapid rate of warm-up may be expected, provided that the water system is thermostatically or shutter controlled. In respect to warm-up, the water-cooled unit has the advantage over the air type, although the air type may use a thermostat to by-pass the oil when cold.

The temperature reduction expected from an oil cooler installation depends largely on the size of the cooler employed. On the present installations, the temperature reductions lie between 50 and 100 degrees Fahrenheit.

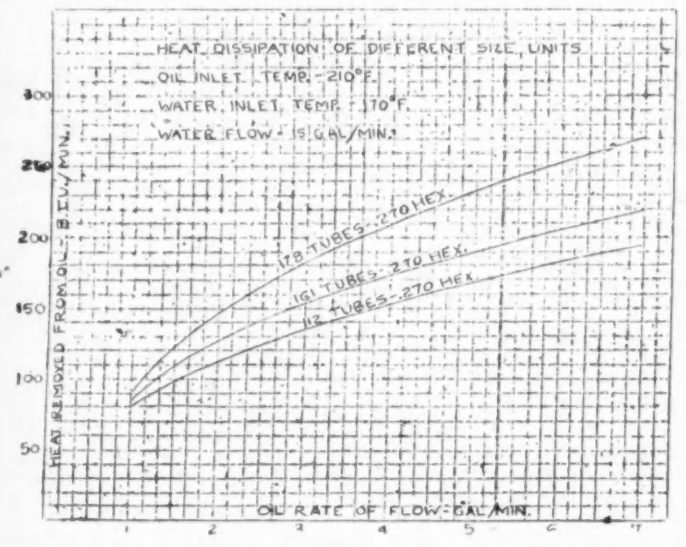


FIG. 4. Heat dissipation from coolers of different sizes

The effectiveness of reduced oil temperature is best shown by one of the tests run with a car on the test track. The car was run 200 miles at 80 m. p. h. with a cooler with a maximum oil temperature of 215 degrees Fahrenheit. With the cooler removed, the car under the same conditions ran less than fifty miles, the bearings failing when the oil reached 275 degrees Fahrenheit, although the oil temperature was still rising at this time. The air temperature was 75 degrees Fahrenheit in both runs.

Fig. 1 shows the oil temperatures of an engine on the dynamometer stand, with and without a water-type cooler, the only temperature which did not stabilize during the run at 2,500 r. p. m., without the cooler. During this test, the bottom tank of the radiator was held at a constant temperature of 170 degrees Fahrenheit.

With any device of this character, which must pass oil regardless of its purity or condition, the question of possible plugging must be considered. As bearing on this, a severe test was run on the testing track. A car with cast-iron pistons was driven 28,000 miles at a minimum speed of sixty miles per hour. The oil was not changed during this time, but added at intervals as needed by the engine. At the conclusion of this test an inspection of the cooler showed that sufficient carbon particles had not accumulated to seriously affect the oil flow through the core.

Even in view of this severe test and the fact that no plugging complaints have as yet been received from service, it is, nevertheless, thought wise at this time to recommend that the cooler be cleaned out with benzol every 20,000 miles. As a further safeguard, to insure flow to bearings, it is possible to connect a by-pass valve around the cooler.

The ability of coolers to withstand pressure is essential.

The amount of heat which may be rejected from a cooler of a given size depends largely upon the temperature difference between the oil and cooling medium and the nature of the cooling medium, whether oil or water. To determine the amount of heat rejected under conditions of operation likely to be encountered, tests were conducted on a medium-sized cooler—161 tubes—set up on a dissipator so that either water or oil could be passed through this cooler.

Fig. 2 shows the heat dissipation at various oil rates of flow with air temperatures of 60, 80 and 100 deg. Fahr., with the air speed constant at 60 m.p.h.

Fig. 3 shows this cooler as a water-type unit under the same conditions of temperature but with a water flow of 25 g.p.m.

Under the same conditions of temperature, we find that the water-type cooler has a considerable advantage over the air type. The reason for this is largely due to the low specific weight and low specific heat of the air as compared to water.

The conclusion to be drawn from the above curves is that on coolers of this size, when we consider the available air temperature and velocity with the available water temperature and velocity, the water-type cooler, with water at 180 degrees Fahrenheit, is comparable with the air-type cooler with air at 100 degrees Fahrenheit.

The dissipation which may be expected from coolers of different size is shown in Fig. 4, where a comparison is made between the 112, 161 and 178 tube water-type coolers.

GEORGE HARRISON PHELPS OBTAINS ATLAS CONTRACT

Detroit, Jan. 21.—Effective January 1, the George Harrison Phelps agency was retained as advertising counsel by the Atlas Drop Forge Company of Lansing, Mich., according to O. C. Hartig, secretary of the company. The Atlas Drop Forge Company supplies crankshafts and other forgings to the automotive, aircraft, tractor and marine industries.

TWO GLASS COMPANIES MERGED IN NEW JERSEY

Vineland, N. J., Jan. 21.—Merger of the Vineland Flint Glass Company and the Kimble Glass Company of Vineland was announced today. They will be operated under the name of the Kimble Glass Company. Col. E. E. Kimble, president of the Kimble Glass Company, will be president of the new concern and Victor Durand, president of the Vineland Flint Glass Company, will be vice-president. Herman K. Kimble will be vice-president and general manager.

The Kimble company employs 1,200 persons and the Vineland company 750. It was stated the merger was effected to bring about economies in operation and to expand the scope of the business. It was further announced that the executive and operating staffs of both companies would be retained.

CAMPBELL-WYANT CUTS DIVIDEND RATE TO $1

Chicago, Jan. 21.—Campbell, Wyant & Cannon Foundry Company has declared a quarterly dividend of 25 cents on the common stock, placing the issue on a $1 annual basis against $2 previously. The dividend is payable March 1 to stock of record February 14. Campbell, Wyant & Cannon Foundry Company reports for year ended December 31, 1930, net profit of approximately $638,840, after charges and Federal taxes, equivalent to $1.83 a share on 348,000 no-par shares of capital stock. This compares with net profit in 1929 of $1,278,652, equal to $3.67 a share on above number of shares.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Cumulative New Commercial Car Registration Statistics, December, 1930

Some of this data has been published previously, but it is given here complete for the convenience of our subscribers.

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Commercial Car Registrations do not include buses.

Returns for today: Colorado, Delaware, Florida, Idaho, Minnesota, New Hampshire, New Jersey, North Carolina, Oklahoma, Rhode Island, South Dakota, West Virginia and the District of Columbia.

States	Autocar	Brockway-Indiana	Chevrolet	Diamond-T	Dodge	Essex	F. W. D.	Fargo	Federal	Ford	G. M. C.	International	Mack	Paige	Relay	Reo	Republic	Rugby	Sterling	Stewart	Studebaker	Whippet	White	Willys	Willys-Knight	Miscellaneous	Totals	States
Arkansas			6							9		2															17	Arkansas
Colorado			25		8					75		3	1			1	1	1					1	2		1	119	Colorado
Delaware		1	22							28	2	7								1							61	Delaware
Florida		1	179		15				1	430	2	20	2	2		3							8	2			665	Florida
Idaho			24		2					40	1	4									1		1				73	Idaho
Illinois	2	4	134	15	37				2	282	3	70	11			4		1	1			1	3	2		15	587	Illinois
Minn.			105	2	11		1	1	1	159	1	23				3					3		1	4		7	322	Minn.
N. Hamp.			24	1	1					23	1		1			1				1							53	N. Hamp.
N. Jersey		1	34		15				1	78	5	7										1	4		1	6	153	N. Jersey
Nor. Car.		1	164		19	1				190	9	7				1					1	1	3	2		7	406	No. Car.
Nor. Dak.			7		1					14	2	5									1						30	N. Dak.
Okla.		1	62	3	18				1	105	4	13				1								1			209	Oklahoma
Rh. Isl.		1	16		6	1			2	47	1	7				6					1		1			1	90	Rh. Island
So. Car.		2	87		4					92	3	3														2	193	S. Carolina
S. Dak.			34	2	6					37	1	19				4		1			4			3		1	112	S. Dakota
Utah			15		3					36		1				1											56	Utah
West Va.		2	96	1	13			2	1	148	8	16				3	1			2	2	2	3	1		3	304	West Va.
Wisconsin			73	4	18				4	145	3	22			2				8		1		1	4		8	293	Wisconsin
D. of Col.			21	1	6				1	61	22	1	4			1			1		4		1			2	126	D. of Col.
Totals	2	14	1128	29	183	2	1	3	14	1999	68	230	19	2	2	29	2	3	10	4	18	5	27	21	1	53	3869	Totals
Ark., '29			33		1					32		1				1						1					69	Ark., 1929
Col., '29			15		8					36	6	7				1						2	1			2	78	Col., 1929
Del., '29	2	2	17		3					37	6					2							2			1	72	Del., 1929
Fla., 1929		6	120		10					228	1	9	1			10					1	4	1				391	Fla., 1929
Idaho, '29			18		3					34	1	7						1					1			1	66	Idaho, '29
Ill., 1929	4	5	150	33	29	1		4	2	281	26	59	11			12			4	3		10	5			49	688	Ill., 1929
Minn., '29		3	105		13			3	1	250	5	38	2			4		1			1	5	3			9	443	Minn., '29
N. H., '29			12		2					17		4	1			1							1				38	N. H., '29
N. J., '29		3	44		16			2	14	92	8	1	6			2			3			3	7			11	212	N. J., '29
N. C., '29			157		28	1		3	1	224	15	30	2				2	1		1		3	4			4	476	N. C., '29
N. D., '29			16							20	3	2										1					42	N. D., '29
Okla., '29	1	1	147	2	24			3	5	158	9	46	11			4					2	2	8		1	1	425	Okla., '29
R. I., '29	1		17	1	17			2		48	4	7	7			5		1		1	1	2					114	R. I., 1929
S. C., '29			52			5				78		3										1	2				141	S. C., 1929
S. D., '29			39		2					58	2	13	6			3						4				2	129	S. D., '29
Utah, '29			7		8					27	1	2				1		1				1					48	Utah, '29
W. V., '29		1	77		30	2			1	136	8	18			1	6	1	1		2	1	5	2			6	298	W. V., '29
Wis., 1929			125	2	23	2		2	5	220	16	23	4			13		2	9	2	3	7	6		1	10	475	Wis., '29
D. C., '29	1		14	4	6					57	9	3	1			2				4			11			3	115	D. C. '29
Totals	9	21	1165	42	223	11		19	29	2033	120	273	52		1	67	3	8	16	13	9	51	54	*	2	99	4320	Totals

*Not in production at that time. †Returns herewith are for two weeks only, balance of month included in the January report.

Motor Industry Leads In Business Recovery

(Continued from PaPge 1)

quet of the National Automobile Chamber of Commerce during the New York show, 'These records indicate that the American people have been cheerful in the use of their highways as it is not likely that this tremendous mileage was accumulated to take them to the poor house.'

"There are now 26,700,000 motor vehicles registered in this country—far more than telephones—and every time the telephone bell rings some car travels seven miles.

"We know that the saturation point keeps moving farther away. It will never be reached as long as population increases, cars continue to wear out and living standards are maintained here and in the 104 other countries to which we are shipping motor vehicles.

"The motor car is not alone a necessity, but an article of universal desire which every one wants.

"We find in the purchasing of a motor car that, unlike the movies, the child selects, the woman approves, and the man pays.

"Every one is trying to pluck the motorist through the imposition of taxes and regulations. The average tax on motor cars now exceeds $33 annually, with always the threat of more—and, unfortunately, with attempts to use the money for other purposes than highway construction and maintenance.

"For the first time in history aggregate special motor vehicle taxes exceeded one billion dollars in 1930—an amount sufficient to pay more than two-thirds of the nation's annual highway bill. Motorists have thus paved the way for a record year in highway construction.

"There have been some reckless statements about the position of the truck and bus. They have taken some traffic from the railroads, although most of the passenger traffic has been lost to the private cars, the owners of which furnish most of the funds for building highways.

"The trucks and buses are heavily taxed and under state regulation, with limits as to size, weight and speed.

"We have great sympathy with the railroads and their oppressive regulations. They are held to fixed tracks with long delays at terminals. The truck and bus, however, supply an entirely different service—and instead of fighting their progress, we are hopeful that railroad men will adopt this new arm of transportation.

"Railroads now own $40,000,000 worth of motor equipment.

"The railroads pay for their right-of-way, but have a monopoly over it. The highways are built by the public, and everybody is permitted to use them, including the railroads.

"About 80 per cent. of the trucks are operated by those delivering their own commodities; 15 per cent. are operated for hire, with 5 per cent. enegaged in the so-called common carrier business.

"The objection to tax raises by bus and truck interests has not been against 'regulation,' but against 'strangulation.'

"Motor manufacturers under the readjusted conditions are working closer together than ever before.

"There is a uniform exchange of statistics relating to many departments in the business; unified support of the advertising and radio programs in connection with the shows, expansion of foreign trade promotion through lectures in foreign countries, the recommendation that hereafter new models of cars shall be announced only during the months of November and December, thus stabilizing the selling season for the retailers. Not the least important advantage of this practice will be steadier employment for labor, especially during the winter months, when new models must be turned out in quantities for dealer stocks. Then we have the junking plan, under which last year over and above the normal junking of 2,500,000, at least 350,000 unsafe cars were removed from the highways.

"The industry has made mistakes, of course," continued Mr. Reeves, "but the leaders have tried to profit by them. We face many problems, including the need for uniform traffic, more traffic engineers to study congestion, and particularly more modern garages in business districts that will take the parked car off the streets."

Mr. Reeves expressed the belief that the very low prices of motor cars had met the reduced buying power of the nation.

He declared that the motor leaders were sensibly optimistic about 1931, believing that it would be considerably better than last year. He called for a moratorium on the spreading of rumors, and suggested planning for better days ahead.

KUENNEN TO DISTRIBUTE DE VAUX IN MICHIGAN

Grand Rapids, Mich., Jan. 21.—Christian G. Kuennen has been appointed distributor of the new De Vaux Six throughout western Michigan, according to an official announcement made here today by R. H. Mulch, general sales manager of the De Vaux-Hall Motors Corporation.

For a number of years Kuennen has been an outstanding figure in the motor car industry and is well known throughout Michigan for his successful operations as a distributor and dealer. His wide experience as an automotive merchant includes the distribution of popular cars in the low-price field and officials of the De Vaux-Hall organization are of the opinion that he is particularly well equipped to handle the De Vaux as the new product is making its bid for popularity in the low-price range.

In addition to his large and well-equipped sales and service establishment in Grand Rapids, Kuennen maintains a staff of four wholesale men who are constantly in the field working with the dealers who operate under the Kuennen distributorship.

The name under which Kuennen will distribute the De Vaux is Kuennen Motor Company. The territory in which the distributing company will operate includes all counties of the "lower peninsula" west of a line running north and south through Saginaw.

NASH STOCKHOLDERS PLAN VOTE ON RECORD DATE

Kenosha, Wis., Jan. 21.—At the annual meeting of Nash Motors Company, to be held February 4, 1931, stockholders will vote on an amendment to the by-laws of the corporation whereby directors will be authorized to fix a record date for stockholders entitled to vote at meetings or to receive dividends or rights. The amendment provides that the record date may not be more than 30 days in advance of the meetings or the distribution of rights or dividends.

GALESBURG, ILL., SHOW DATES

Galesburg, Ill., Jan. 21.—The Galesburg Automobile Dealers' Association has announced March 12 to 15 as dates for the annual automobile show, which will be held in the armory.

CURRENT PRICES OF PASSENGER CAR MODELS

AUBURN—8-98. 127 W. B.
Standard Models, not including free wheeling
2-dr. Brougham..945 Con. Cabriolet..1,045
4-dr. Full Sedan..995 Con. Phae. Sed..1,145
B. Man's Coupe..995

AUBURN—8-98. 127 W. B.
Custom Models, including free wheeling
5 4-dr. Sedan...1,195 Cabriolet (R.S.)..1,245
B. Man's Coupe..1,195 5 Con. Pha. Sed..1,345
5 2-dr. Brough..1,145

AUSTIN—4-cyl. 75 W. B.
2 Roadster .....445 2 Coupe 395

BUICK—8-50. 114 W. B.
2 Bus. Coupe...1,025 5 Phaeton 1,055
5 2-dr. Sedan...1,035 2 Spt. Coupe...1,055
4 Spt. Roadster..1,055 5 4-dr. Sedan ..1,095

BUICK—8-60. 118 W. B.
2 Bus. Coupe...1,285 5 Phaeton 1,335
2 Spt. Coupe ..1,325 4 Spt. Roadster..1,335
5 4-dr. Sedan ..1,355

BUICK—8-80. 124 W. B.
4 Coupe .....1,535 5 4-dr. Sedan ..1,565

BUICK—8-90. 132 W. B.
4 Spt. Roadster..1,610 5 4-dr. Sedan ..1,785
7 Touring .....1,620 7 4-dr. Sedan ..1,935
2 Spt. Coupe...1,720 7 Lim. Sedan....2,035
5 Coupe 1,765

CADILLAC—V-8. Fisher Custom. 134 W B.
2 Coupe .....2,695 2 Con. Coupe...2,945
5 Coupe .....2,795 7 Sedan 2,945
5 Sedan .....2,795 5 A. W. Phaeton..3,795
5 Town Sedan..2,845 7 Imp. Sedan ..3,095
2 Roadster .....2,845 7 Touring (Fleetwood) 3,195
5 Phaeton 2,945

CADILLAC—V-12. 140 W. B.
2 Coupe .....3,795 7 Sedan (143 (W. B.).....4,195
5 Coupe 3,895
5 Sedan .....3,895 7 Touring 4,295
Roadster .....3,945 7 Imperial Sedan (143 W. B.)..4,345
5 Town Sedan...3,945
Phaeton .....4,045 A. W. Phaeton..4,895
Con. Coupe 4,045

CADILLAC—V-16. 148 W. B. Fleetwood Custom.
2 Roadster .....5,350 2 Coupe 6,850
A. W. Phaeton..5750 2 Con. Coupe....6,900
2 Coupe .....5,800 5 Club Sedan....6,950
5 Coupe .....5950 5 Sedan 6,950
5 Club Sedan...5,950 5 Sedan Cabrio..7,125
5 Sedan .....5,950 7 Sedan 7,225
5 Sedan Cabrio..6,125 5 Imperial 7,300
5 Phaeton .....6,150 5 Imp. Cabriolet..7,350
7 Sedan .....6,225 7 Imp. Sedan...7,525
5 Imperial .....6,300 Town Cabriolet (Opera seats) .8,750
5 Imp. Cabrio...6,350
5 Phaeton .....6500 Town Cabriolet (quarter windows) 8,750
7 Imp. Sedan...6,525
Town Cabriolet (opera seats)..6,525 Town Cabriolet (leather quarters) 8,750
Town Cabriolet, (q'rter win.)..6,525 Lim. Brougham..8,750
Town Cabriolet, (full leather)..6,525 Town Brougham 9,200
Lim. Brough'm..6,525 Town Brougham 9,700

CHEVROLET—6-cyl. 109 W. B.
2 Roadster .....475 5 Sedan 635
2-4 Sp. Roadster..495 5 Special Sedan...650
5 Phaeton .....510 5 Coupe 595
2 Coupe (3 win.)..535 Con. Cabriolet....615
2 Coupe (5 win.)..545 Lan. Phaeton.....650
5 Coach 545
2-4 Sport Coupe (5 windows)...575

CHRYSLER—"6." 6-cyl. *175⅞ O. A.
Roadster .....885 Sedan 895
Coupe .....885 Con. Coupe.....

CHRYSLER—8-cyl. *186⅛ O. A.
2-4 Roadster ...1,495 5 Royal Sedan (Special) 1,565
2-4 Royal Coupe (Standard) ...1,495 2-4 Sport Roadster (6 wire wheels) 1,595
5 Royal Sedan (Standard) ...1,525 2-4 Con. Coupe..1,665
2-4 Royal Coupe (Special) 1,535

CHRYSLER—Imperial. 8-cyl. 211 O. A.
5 Sedan .....2,745 7 Sedan Lim.....3,145
5 Sedan (Cl.C) ..2,845 2-4 Cus. Coupe..3,150
7 Sedan 2,945

CORD—8-cyl. 137½ W. B.
Sedan .....2,395 Cabriolet 2,495
Brougham .....2,395 Phaeton Sedan..2,595

DE SOTO—Six. *169⅛ O. A.
Stand. Coupe.... 740 Roadster 795
4-dr. Sedan.....775 Con. Coupe.....825
Coupe (RS).....775

DE SOTO—8-cyl. *177 O. A.
2 Business Coupe..965 5 Touring 1,035
2-4 Roadster (RS) 985 5 De L. Sedan...1,065
5 Stand. Sedan...995 2-4 Con. Coupe (RS) 1,075
2-4 De L. Coupe (RS) 1,025

DE VAUX—6 Cyl. 112 W. B.
Phaeton .....545 Spec. Sedan, Bus. Coupe .....595 (W.W.) 725
Spec. Coupe (W.W.) .....625 Custom Sedan (6 W.W.) 785
Sport Coupe (R.S.) .....665 Custom Coupe (6 W.W.) 785
Sedan 695

DODGE—Six. *176⅞ O. A.
2 Business Coupe..735 5 4-dr. Sedan 765
2-4 Stan. Coupe (RS) .....755 5 4-dr. Phaeton...775
2-4 Roadstr (RS) 755 2-4 Con. Coupe (RS) 835

DODGE—Six. 114 W. B.
Business Coupe (5 wire wheels) 815 2 Business Coupe (6 wire wheels) 850
2-4 Coupe (RS) (5 wire wheels) 835 2-4 Coupe (RS) (6 wire wheels) 870
5 Sedan (5 wire wheels) .....845 5 Sedan (6 wire wheels) 880

DODGE—Eight. 118 W. B.
2-4 Coupe (RS) (5 wire whls) 1,095 5 Sedan (6 wire wheels) 1,170
5 Sedan (5 wire wheels) 1,135

DODGE—Eight. 118 W. B.
2-4 Roadster (RS) 995 5 Sedan 1,045
2-4 Stan. Coupe (RS) .....1,025 2-4 Con. Coupe (RS) 1,095

DURANT—"610." 4-cyl. 112 W. B.
Business Coupe...735 Sedan 765
Coupe (R.S.).....755

DURANT—"612." 6-cyl. 112 W. B.
Business Coupe...760 Sedan 795
Coupe (R.S.).....780 Ch. Dr. Sedan.....825

DURANT—"614." 6-cyl. 112 W. B. De Luxe Models
Spl. Coupe (RS)..965 De Luxe Sedan...995

ESSEX—6-cyl. 113 W. B.
2 Coupe .....595 Standard Sedan..695
Coach .....595 Sport Roadster....725
Coupe (RS) .....645 Touring Sedan....775

FORD—Model A. 4-cyl. 103½ W. B.
Pickup Op. Cab..425 Standard Sedan
Roadster .....430 (3 win.) 590
Phaeton .....435 4 Victoria 580
Pickup Cl. Cab..455 De Luxe Phaeton.580
Tudor Sedan ...490 Cabriolet 595
Coupe .....490 4-dr. De Luxe
De L Roadster...475 Sedan (2 win.) .630
Sport Coupe ....500 Town Sedan 630
De Luxe Coupe..525 Town Car.....1,200

FRANKLIN—Transcontinent. 6-cyl. 125 W.B.
5 Sedan .....2,295 Vic. Brougham..2,395
Oxford Sedan...2,345 Pursuit 2,495
Coupe .....2,345 Town Sedan.....2,425
Con. Coupe.....2,395

FRANKLIN—Transcontinent. 6-cyl. 132 W.B.
Roadster (6 wire wheels)..2,345 7 Sedan 2,475
5 Special Sedan..2,425 Sport Salon.....2,595
Spec. Limousine..2,725

FRANKLIN—De Luxe. 6-cyl. 132 W. B.
5 Sedan .....2,695 7 Sedan 2,895
5 Pirate Tour...2,695 7 Limousine 2,995
7 Pirate Phaet..2,695 Town Berline (6 wire wheels) .3,195
5 Oxford Sedan..2,745
Club Sedan.....2,745 Speedster (5 wire wheels)...3,345
Con. Coupe.....2,765
Town Sedan....2,775 Con. Speedster..3,495
Vic. Brougham..2,795

GARDNER—Model 136. 122 W. B.
Sport Sedan ...1,270 Brougham 1,320
Coupe .....1,320 Roadster 1,320

GARDNER—Model 148. 125 W. B.
Roadster .....1,795 Sport Phaeton..1,845
Brougham .....1,795 Sedan 1,845
Sport Sedan ...1,795

GARDNER—MODEL 158. 130 W. B.
Sport Sedan ..2,070 Coupe 2,120
Brougham .... 2,120 Sedan 2,170
Roadster 2,120

GRAHAM-PAIGE—Standard Six. 115 W. B.
Coupe .....845 Roadster 895
Town Sedan....895 Sedan 995
Coupe (R.S.)....895

GRAHAM-PAIGE—Special Six. 115 W. B.
Coupe .....925 Town Sedan.....975
Coupe (R.S.)....975 Sedan 1,035

GRAHAM-PAIGE—Special Eight. 120 W. B.
Coupe .....1,155 Sport Sedan.....1,195
Coupe (R.S.)...1,195 Sedan 1,245

GRAHAM-PAIGE—Custom Eight. 134 W. B.
5 Sedan .....1,845 7 Limousine 2,095
7 Sedan 1,895

HUDSON—8-cyl. 119 W. B.
Coupe .....875 Standard Sedan...995
Coach .....895 Sport Roadster...995
Coupe (RS).....925 5 Phaeton.....1,095
Touring Sedan..945

HUDSON—8-cyl. 126 W. B.
5 Tour. Sedan...1,145 7 Phaeton 1,285
Brougham .....1,195 Club Sedan 1,445
7 Fam. Sedan...1,195 7 Sedan 1,450

HUPMOBILE—Century 6. 114 W. B.
5 Sedan .....995 Cabriolet (RS)..1,050
Com. Coupe.....995 5 Phaeton 1,050
2 Coupe (R.S.)...995 Roadster (RS)..1,075

HUPMOBILE—Century 8. 118 W. B.
5 Sedan .....1,295 2 Cabriolet (RS)..1,350
2 Coupe (RS)..1,295 5 Phaeton 1,350
2 Com. Coupe...1,295 2 Roadster (RS)..1,375

HUPMOBILE—Series C. 121 W. B.
5 Sedan .....1,595 Victoria Coupe..1,615
2 Coupe (RS)...1,595 7 Spt. Phaeton..1,685
2 Cabriolt (RS)..1,595 5 Town Sedan...1,705
4 Coupe 1,615

HUPMOBILE—Series H. 125 W. B.
5 Sedan .....1,895 Victoria Coupe..1,915
2 Coupe (RS)...1,895 7 Spt. Phaeton..2,005
2 Cabriolt (RS)..1,895 5 Town Sedan...2,005
4 Coupe 1,915

HUPMOBILE—Series U. 137 W. B.
7 Sedan .....2,295 Sedan Limou....2,445
Victoria Coupe 2,295

All Hupmobile models include free wheeling

JORDAN—Standard 80. 120 W. B.
5 Sedan .....1,795 Coupe 1,795

JORDAN—Great 90. 8-cyl. 125 W. B.
5 Sedan .....2,295 Playboy Roadst..2,595
Stand. Coupe...2,295 Speedboy Sport Conv. Coupe....2,495 Phaeton 2,795
Sport Sedan....2,595

JORDAN—Great 90. 8-cyl. 131 W. B.
7 Touring .....2,495 7 Sedan Limo...2,695
7 Sedan 2,595

LA SALLE—8-cyl. 134 W. B. Fisher Custom.
2 Coupe .....2,295 5 Town Sedan..2,345
5 Sedan .....2,295 7 Sedan 2,475
2 Con. Coupe ..2,295 7 Imp. Sedan...2,595
5 Coupe 2,295

LA SALLE—8-cyl. 134 W. B. Fleetwood Custom.
2 Roadster ....2,245 5 Sedan Cabrio..3,245
7 Touring .....2,345 5 Sedanette 3,245
5 A. W. Phaeton.3,245

LINCOLN—8-cyl. 145 W. B. Standard Models
Sport Phaeton..4,400 Town Sedan
Sport Touring..4,400 (3 windows)...4,600
5 Coupe .....4,600 5 Sedan 4,700
Town Sedan (2 windows)..4,600 7 Sedan 4,900
7 Limousine 5,100

LINCOLN—8-cyl. 145 W. B. Custom Models
Con. Roadster (Le Baron) 4,700
2 Coupe (Judkins) ...5,200
Berlin (2 win.) (Judkins) ...5,800
Berline (3 win.) (Judkins) ...5,800
Limousine (Willoughby) 6,100
Con. Phaeton (Derham) ...6,200
Con. Coupe (Dietrich) ...6,400
Con. Sedan (Dietrich) 6,800
A. W. Brougham (Le Baron) ...7,100
A. W. Brougham (Brunn) 7,200
A. W. Cabriolet (Brunn) 7,200
A. W. Cabriolet S.C.(LeBaron) 7,300
A. W. Cabriolet (Brunn) 7,400
Panel Brougham (Willoughby) 7,400

MARMON—70.
2 Stand. Coupe ..950 4 Vic. Coupe.....895
5 Sedan .....995 2 Con. Coupe....1,045

MARMON—88. 130-136 W. B.
2 Stand. Coupe 2,275 2 Con. Coupe...2,395
5 Sedan .....2,295 7 Sedan 2,495
5 Club Sedan...2,345 7 Limousine 2,595
Lincoln models include free wheeling.

MARMON—16-cyl. 145 W. B.
5 Sedan .....4,775 2 Con. Coupe....4,875
2 Coupe .....4,795 7 Sedan 4,945
5 Cl. Cp. Sedan.4,845 5 Con. Sedan....4,995
5 Victoria .....4,845 7 Limousine 5,045

(Recent price changes in bold face)

NASH—"660." 6-cyl. 114¼ W. B.
Coupe .....795 4-dr. Sedan.....845
2-dr. Sedan.....795 Touring 895
Coupe (RS).....825

NASH—"870." 8-cyl. 116¼ W. B.
Coupe .....945 4-dr. Sedan.....995
4-dr. Spec. Sedan.955 4 Con. Sedan....1,075
Coupe (RS).....975

NASH—"880." 8-cyl. 121 W. B.
Coupe .....1,245 4-dr. Town Sed..1,375
Coupe (RS).....1,285 4 Con. Sedan....1,325
4-dr. Sedan....1,295

NASH—"890." 8-cyl. 133 W. B.
4-dr. Sedan (124 W.B.) .....1,565 Ambassador 1,825
Coupe .....1,695 7 Sedan 1,925
Cabriolet .....1,695 7 Limousine 2,025
Coupe (RS).....1,745

"OAKLAND—8-cyl. 117 W. B.
Coupe .....997 Con. Coupe 1,097
2-dr. Sedan.....997 4-dr. Sedan 1,097
Sport Coupe....1,077 Custom Sedan...1,157

OLDSMOBILE—6-cyl. 113½ W. B. Standards
2-dr. Sedan .....845 4-dr. Sedan 925
Business Coupe..845 Con. Roadster ...935
Sport Coupe ....895 Patrician Sedan..960

OLDSMOBILE—6-cyl. 113½ W. B. De Luxe Models
2-dr. Sedan .....910 4-dr. Sedan 990
Business Coupe..910 Con. Roadster...1,000
Sport Coupe ....960 Patrician Sedan.1,025

PACKARD—8-26. Standard 8. 127½ W. B.
5 Sedan 2,385

PACKARD—8-33. Standard 8. 134½ W. B.
2 Roadster .....2,425 5 Club Sedan....2,675
4 Phaeton .....2,425 4 Sport Phaeton.2,725
2 Coupe .....2,525 7 Sedan 2,785
7 Touring .....2,525 7 Sedan Lim.....2,885
2 Con. Coupe....2,550 Conv. Sedan....3,465
5 Coupe 2,675

PACKARD—8.40. De Luxe 8. 140½ W. B.
4 Phaeton .....3,490 4 Sport Phaeton3,790
2 Roadster .....3,490 5 Sedan 3,795
2 Coupe .....3,545 5 Coupe 3,850
7 Touring .....3,595 5 Club Sedan ...3,950
2 Conv. Coupe...3,595

PACKARD—8-45. De Luxe 8. 145½ W. B.
7 Sedan .....4,150 7 Sedan Lim.....4,285

PEERLESS—Standard 8. 118 W. B.
5 Sedan .....1,495 5 Brougham 1,545
2 Coupe (RS)...1,495 2 Cabriolet (RS)..1,595
5 Club Sedan...1,545

PEERLESS—Master 8. 125 W. B.
5 Sedan .....1,995 5 Brougham 2,045
2 Coupe (RS) ..1,995 2 Cabriolet 2,095
5 Club Sedan....2,045

PEERLESS—Custom 8. 138 W. B.
2 Coupe (RS)...2,795 5 Brougham 2,845
5 Sedan .....2,795 7 Sedan 2,945
5 Club Sedan....2,845 7 Limousine 3,145

PEERLESS—8-cyl. 125 W. B. De Luxe Master
5 Sedan .....2,320 Brougham 2,370
2 Coupe .....2,320 Cabriolet 2,430
Club Sedan 2,370

PIERCE-ARROW—43. 8-cyl. 134 W. B.
2-4 Coupe (RS) 2,685 2-4 Sport Roadster
5 Sport Tourer..2,895 (RS) 2,895

PIERCE-ARROW—43. 8-cyl. 137 W. B.
5 Sedan .....2,685 7 En. Dr. Limou.3,145
5 Club Sedan...2,835 5 Con. Sedan ...3,650
7 Sedan 2,995

PIERCE-ARROW—42. 8-cyl. 142 W. B.
5 Tourer .....3,450 4 Spt. Phaeton..3,750
2-4 Spt. Roadster (RS) .....3,450 5 Club Sedan...3,745
7 Sedan 3,825
2-4 Con. Coupe (RS) .....3,650 5 Club Berline..3,945
7 En. Dr. Limou.3,995
5 Sedan 3,695

PIERCE-ARROW—42. 8-cyl. 147 W. B.
7 Spt. Tourer...4,275 5 Sport Sedan (Le Baron)...5,375
2-4 Con. Coupe (RS) .....4,275 7 En. Dr. Limou. 7 Sedan .....4,785. (Le Baron)...5,975
7 En. Dr. Lim..4,985 Formal Town Brougham 6,250
2-4 Coupe (RS) (Le Baron)...5,100 Formal Town Car 6,250
5 Coupe Victoria (Le Baron)...5,100 Formal Town Landaulet 6,400
5 Con. Sedan (Le Baron)...5,200

All Pierce-Arrow models include free wheeling.

PLYMOUTH—4-cyl. *167 O. A.
2 Bus. Roadster..535 5 Phaeton 625
2 Bus. Coupe.....565 2 Coupe (RS).....625
2-dr. Sedan.....565 4-dr. Sedan.....625
4 Roadster .....610 4 Con. Coupe.....695

"PONTIAC—6-cyl. 112 W. B.
2-dr. Sedan.....772 Con. Coupe 842
Coupe .....772 4-dr. Sedan.....842
Sport Coupe ....812 Custom Sedan....882

REO FLYING CLOUD—6 cyl. 125 W. B.
Sedan .....$1,695 Coupe $1,695

REO FLYING CLOUD—8 cyl. 130 W. B.
Sedan .....$1,995 Coupe $1,995

REO ROYALE—8 cyl. 135 W. B.
Sedan .....$2,485 Coupe $2,485

STUDEBAKER—Six. 114 W. B. Including free wheeling
Roadster .....795 Tourer 895
2 Bus. Coupe.....845 Regal Tourer.....895
5 4-dr. Sedan.....895 5 Regal Sedan
4 Coupe (RS).....895 (6 wire wheels) 985

STUDEBAKER—Commander 8-70. 124 W. B.
4 Coupe .....1,585 5 Brougham
5 Sedan .....1,585 (Cloth) 1,785
4 Victoria .....1,585 5 Brougham
5 Regal Sedan..1,785 (Mohair) 1,785

STUDEBAKER—Dictator. 8-cyl. 114 W. B.
2 Coupe .....1,095 5 Sedan 1,150
4 Coupe .....1,150 Regal Sedan....1,250

STUDEBAKER—President 8-80. 130 W. B.
5 Sedan .....1,850 5 State Sedan
2 Coupe .....1,850 (Mohair) 2,050
4 State Roadstr.1,950 5 State Sedan
4 State Coupe...2,050 (Cloth) 2,050

STUDEBAKER—President 8-90. 136 W. B.
7 Tourer .....1,850 State Victoria.2,350
7 State Tourer..2,150 7 State Sedan
7 Sedan .....2,150 (Mohair) 2,350
5 Brougham (Mohair) ....2,350 7 State Sedan (Cloth) 2,350
5 Brougham (Cloth) .....2,350 7 Limousine 2,600

STUTZ—LA. 6-cyl. 127½ W. B.
5 Coupe .....1,995 2 Speedster 2,585
5 Sedan .....2,245 4 Speedster 2,585
2 Coupe .....2,245 4 Speedster (TC) 2,785
Cab. Coupe.....2,445

STUTZ—MA. 8-cyl. 134½ W. B.
5 Coupe .....3,445 Cab. Coupe.....3,595
2 Coupe .....3,495 Tor. Speedster...3,595
2 Speedster .....3,495 5 Sedan 3,695
4 Speedster .....3,495 4 Speedster (TC) 3,795

STUTZ—MB. 8. cyl. Custom. 145 W. B.
7 Speedster .....3,595 7 Limousine 3,995
5 Sedan .....3,855 Cab. Coupe.....3,995
7 Sedan .....3,895 5 Con. Sedan....4,395

STUTZ—MB. 8-cyl. Salon. 145 W. B.
5 Sedan (Le Baron)...4,795 7 Sedan Limousine (Le Baron)....5,195
6 Brougham (Le Baron)...4,995 5 Trans. Cabriolet (Le Baron)....5,610
6 Sedan (Le Baron)...4,995 7 Trans. Town Car (Le Baron)....5,700
6 Bro. Limousine (Le Baron)...5,195 7 Trans. Town Car (Fleetwood) ..7,495
6 Sed Limousine (Le Baron)...5,195

STUTZ—MA. 8-cyl. 134½ W. B. Chateau Series Weymann.
4 Longchamps ..4,145 5 Versailles 4,145

STUTZ—MB. 8-cyl. 145 W. B. Chateau Series Weymann.
5 Chaumont ....4,545 5 Monte Carlo...4,695

WILLYS—6-97. 6-cyl. 110 W. B.
2 Roadster .....495 5 Club Sedan.....625
5 Touring .....545 5 Sedan 675
2 Coupe 565

WILLYS—6-98-D. 6-cyl. 113 W. B.
4 Victoria Coupe.795 4 Vic. Coupe (DeL) 850
5 Standard Sedan.795 5 Sedan (DeL)....850

WILLYS—8-80-D. 8-cyl. 121 W. B.
4 Victoria Coupe.995 4 Victoria Coupe
5 Sedan .....995 (De Luxe).....1,095
5 Sedan (DeL)..1,095

WILLYS-KNIGHT—66-D. 6-cyl. 121 W. B.
4 Vic. Coupe....1,095 4 Victoria Coupe
5 Sedan .....1,095 (De Luxe).....1,195
5 Sedan (DeL)..1,195

*Over all length of chassis instead of wheel base.

**As delivered prices only are quoted, they vary in different sections of the country and the Oakland-Pontiac prices given above are for New York city only.

The Foundation of All Successful Sales Promotion

According to L. Ames Brown, President of Lord & Thomas & Logan, whose clients spent $50,000,000 with them in 1931: "This is the largest volume of business ever placed by our company, as compared with $40,000,000 spent in 1929. More than half the total has been expended in daily newspapers, which are acknowledged today more than ever before AS THE FOUNDATION OF ALL SUCCESSFUL SALES PROMOTION."

Whether the newspaper is in the general field or whether it is in the business field like Automotive Daily News, the daily newspaper still should be used as the foundation for a sales promotion program.

Advertisers in the automotive field desiring to reach factory officials, dealers, distributors and others should take advantage of Automotive Daily News, its high reader interest, its accurate, speedy and complete service.

Because it serves better than any other medium in the automotive industry it commands a subscription price of $12 a year. Also because it serves better, its reader interest is higher.

The advertiser's message always is visible in Automotive Daily News. He gets a better break per dollar than he does in any similar medium.

Chicago Show Issues

Publication Dates	*Advertising Forms Close*
January 24	January 22
January 26	January 23
January 27	January 24
January 28	Janaury 26
January 29	January 27
January 30	January 28

Automotive Daily News

H. A. TARANTOUS, *Bus. Mgr.* GRAYBAR BUILDING, NEW YORK CITY

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